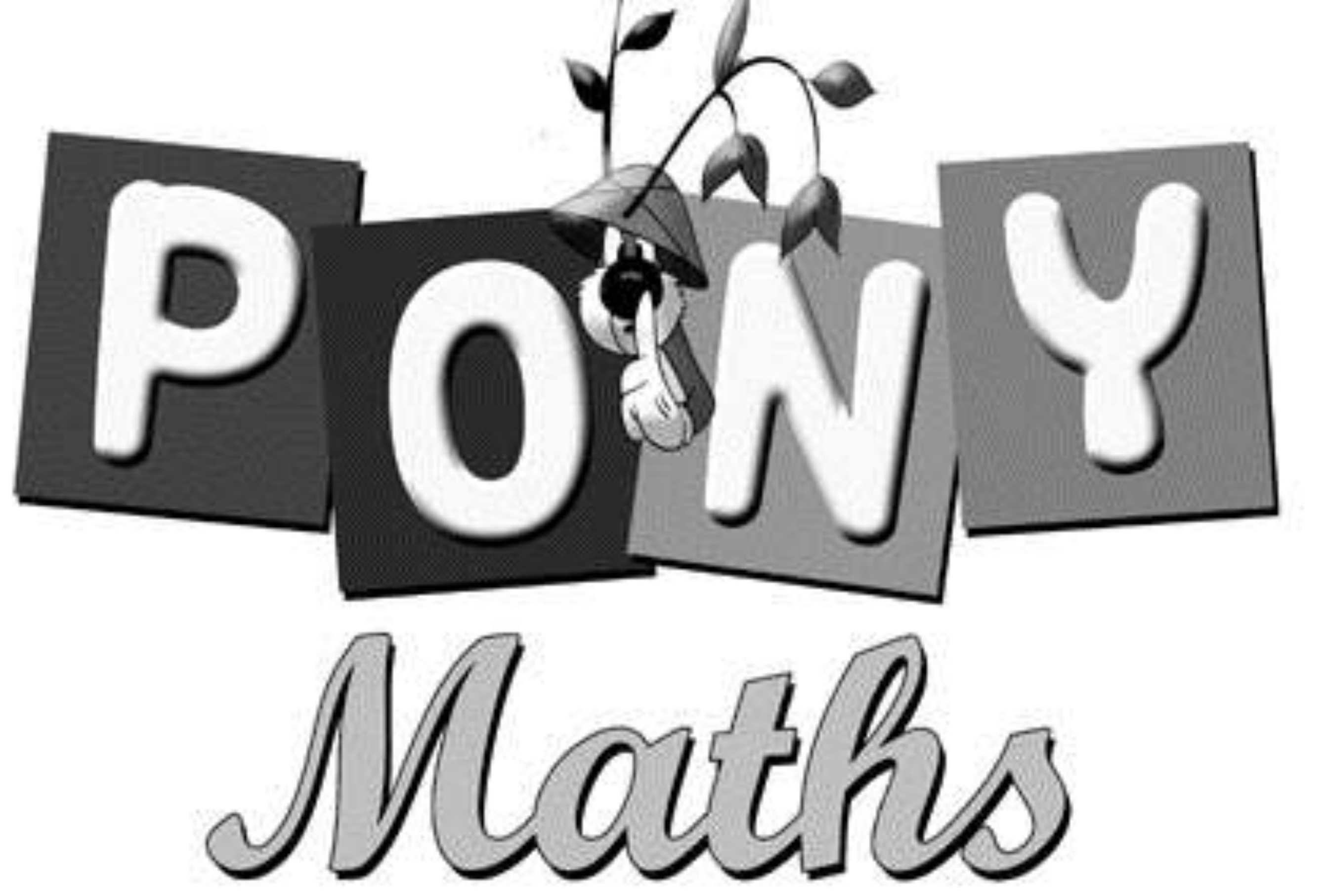


For The Primary Stage

5th. Primary



Exercises

First Term 2018

Unit 1

Fractions

Approximating to the nearest hudredth & thousandth

1 Approximate each of the following numbers to the nearest hundredth :

(a) 76.514 ≃ .... (b) 52.608 ≃ .... (c) 75.325 ≃ ....

(d) 21.8253 ≃ .... (e) 52.1248 ≃ .... (f) 0.737 ≃ ....

(g) 23.297 ≃ .... (h) 0.996 ≃ .... (i) 0.002 ≃ ....

(j) $\frac{5685}{1000}$ ≃ .... (k) $\frac{25698}{10000}$ ≃ .... (l) $2\frac{1}{8}$ ≃ ....

2 Approximate each of the following numbers to the nearest thousandth :

(a) 41.6247 ≃ .... (b) 2.0509 ≃ .... (c) 0.0474 ≃ ....

(d) 144.1015 ≃ .... (e) 4.6798 ≃ .... (f) 19.9996 ≃ ....

(g) 0.0004 ≃ .... (h) 0.9986 ≃ .... (i) $16\frac{27}{10000}$ ≃ ....

3 Choose the correct answer :

(a) 5.345 ≃ .... "to the nearest hundredth" (5.346 *or* 5.35 *or* 5 *or* 5.3)

(b) 2.5786 ≃ .... "to the nearest $\frac{1}{1000}$"
(2.579 *or* 2.58 *or* 2.578 *or* 2.576)

(c) 371.456 ≃ .... "to the nearest 100" (371.46 *or* 400 *or* 300 *or* 371.5)

(d) 17.947 ≃ .... "to the nearest 2 decimal places"
(17.948 *or* 17.95 *or* 17.90 *or* 17.94)

(e) 736.592 ≃ 736.59 to the nearest ....
(unit *or* tenth *or* hundredth *or* thousandth)

(f) 82.497 ≃ 82.50 to the nearest ....
(unit *or* tenth *or* hundredth *or* thousandth)

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4 Find the result of each of the following operations, then approximate it to required approximation :

(a) 2.253 + 12.564 = ... ≃ .... (to the nearest $\frac{1}{100}$)

(b) 65.384 + 63.427 = ... ≃ .... (to the nearest hundredth)

(c) 37.4289 – 14.081 = ... ≃ .... (to the nearest thousandth)

(d) 13.376 + 15.75 = ... ≃ .... (to the nearest 2 decimal places)

(e) 729.72 – 122.743 = ... ≃ .... (to the nearest hundredth)

Write down the smallest decimal fraction that includes the digits (2 , 5 , 7 , 8) , then approximate that number to the nearest hundredth and nearest thousandth.

the smallest decimal fraction = ... ≃ .... to nearest hundredth

≃ .... to nearest thousandth

Write the greatest decimal fraction which consists of 6 , 4 , 3 and 5 , then approximate it to the nearest $\frac{1}{10}$ and $\frac{1}{100}$

the greatest decimal fraction = ... ≃ .... to nearest $\frac{1}{10}$

≃ .... to nearest $\frac{1}{100}$

Given that : X = 13.452 , Y = 7.273

Find X + Y approximating the sum to the nearest hundredth.

X + Y = ...

Given that : L = 62.3724 , M = 32.7285

Find L + M approximating the sum to the nearest thousandth.

L + M = ...

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A road extends for 74389 metres.

Find its length in kilometres approximating the result to the nearest hundredth.

....

....

Two pieces of cloth of length 285.95 m. and 382.275 m.

Find the sum of the lengths of the two pieces approximating the result to the nearest $\left(\frac{1}{100}\right)$

....

....

A trader had 20 kg. of cheese. If he sold 10.25 kg. in the first day and 5.355 kg. in the next day.

How many kilograms were left with him approximating the result to the nearest hundredth ?



1 ***Complete each of the following :***

[a] $0.7351 \simeq$ .... (to the nearest hundredth)

[b] $152.3017 \simeq$ .... (to the nearest thousandth)

[c] $3\frac{18}{500} =$ .... $\simeq$ .... (to the nearest hundredth)

[d] $99.995 \simeq$ .... (to the nearest hundredth)

[e] $0.9998 \simeq$ .... (to the nearest thousandth)

2 ***Choose the correct answer :***

[a] $5.994 \simeq 5.99$ to the nearest ....
(unit *or* tenth *or* hundredth *or* thousandth)

[b] $12.3798 \simeq 12.380$ to the nearest ....
(unit *or* tenth *or* hundredth *or* thousandth)

[c] $4\frac{1}{8} \simeq$ .... to the nearest hundredth.
(4.125 *or* 4.12 *or* 4.13 *or* 4.1)

[d] 3 725 m. $\simeq$ .... to the nearest kilometre. (3 *or* 4 *or* 37 *or* 3 730)

[e] 47 997 $cm^3 \simeq$ .... to the nearest litre.
(47.9 *or* 47 *or* 48.99 *or* 48)

3 ***Complete each of the following :***

[a] $14.372 + 15.449 =$ .... $\simeq$ .... (to the nearest hundredth)

[b] $17.48 - 9.3746 =$ .... $\simeq$ .... (to the nearest thousandth)

[c] $2\frac{3}{8} - \frac{4}{200} =$ .... $\simeq$ .... (to the nearest hundredth)

[d] The difference between $\frac{31}{500}$ and $0.421 \simeq$ ....
.... $-$ .... $=$ .... $\simeq$ .... (to the nearest hundredth)

[e] 13.259 kilometre $\simeq$ .... kilometre.

4 ***Write the greatest decimal fraction which consists of 3 , 5 , 4 and 2 , then approximate it to the nearest hundredth and to the nearest thousandth.***

....

5 ***Two pieces of cloth are of length 85.91 m. and 82.3972 m. Find the sum of the lengths of the two pieces approximating the result to the nearest thousandth.***

....

....

Exercise 2

Comparing and ordering fractions

1 Put the suitable sign (>) , (<) or (=) in the blanks :

a $\frac{1}{5}$ ☐ $\frac{4}{5}$ b $\frac{9}{10}$ ☐ $\frac{3}{10}$ c $\frac{7}{9}$ ☐ $\frac{9}{9}$

d $\frac{2}{8}$ ☐ $\frac{2}{4}$ e $\frac{1}{7}$ ☐ $\frac{1}{3}$ f $\frac{3}{4}$ ☐ $\frac{3}{5}$

g 0.7 ☐ $\frac{7}{3}$ h $3\frac{5}{12}$ ☐ $4\frac{4}{9}$ i 1 ☐ $\frac{3}{4}$

j $2\frac{1}{4}$ ☐ $2\frac{1}{3}$ k 7 ☐ $6\frac{6}{9}$ l $2\frac{3}{4}$ ☐ $\frac{5}{2}$

2 Choose the correct answer between brackets :

a $\frac{4}{5}$ .... $\frac{5}{8}$ (< or > or =)

b $\frac{5}{6}$ .... $\frac{4}{7}$ (< or > or =)

c $\frac{8}{9}$ > .... ($\frac{7}{8}$ or $\frac{9}{10}$ or $\frac{19}{20}$ or $\frac{14}{15}$)

d $\frac{9}{10}$ < .... ($\frac{14}{20}$ or $\frac{17}{20}$ or $\frac{15}{20}$ or $\frac{19}{20}$)

e $\frac{1234}{1432}$ .... $\frac{1567}{891}$ (< or > or =)

3 Find the possible values of x which satisfy the following relations, where x is a whole number :

(a) $\frac{4}{7} < \frac{x}{7} < \frac{8}{7}$ $x =$ .... (b) $\frac{5}{6} > \frac{5}{x} > \frac{5}{9}$ $x =$ ....

(c) $\frac{5}{8} < \frac{5}{x} < 1$ $x =$ .... (d) $1 > \frac{x}{5} > \frac{1}{5}$ $x =$ ....

4 Find the values of a , b and c if :

(a) $\frac{2}{5} = \frac{a}{15}$ a = ... (b) $\frac{b}{8} = \frac{15}{24}$ b = ... (c) $\frac{2}{3} = \frac{16}{c}$ c = ...

Complete using (>) , (<) or (=) :

(a) 0.7 ☐ $\frac{7}{3}$ (b) 2.7 ☐ $2\frac{7}{9}$ (c) 3.2 ☐ $3\frac{1}{2}$

(d) $4\frac{1}{3}$ ☐ 4.3 (e) 0.03 ☐ $\frac{3}{95}$ (f) 0.12 ☐ $\frac{6}{50}$

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Put (✔) for the correct statement and (✘) for the incorrect one :

(a) $4376 < 0.407$ ( )

(b) $50.61 > 0.501$ ( )

(c) $\frac{9}{12} > \frac{3}{4}$ ( )

(d) $\frac{1}{16} > \frac{1}{15}$ ( )

(e) $\frac{7}{8} > 0.775$ ( )

(f) $3.5 > 3\frac{4}{9}$ ( )

(g) $\frac{1}{4} = 0.25$ ( )

(h) $\frac{1401}{4312} < \frac{15}{11}$ ( )

Arrange each of the following in a descending and an ascending order :

$\frac{2}{7}, \frac{5}{7}, \frac{3}{7}, \frac{4}{7}$

ascending .... , ... , ... , ...

descending .... , ... , ... , ...

$\frac{2}{10}, \frac{9}{10}, \frac{14}{10}, 0.5, \frac{7}{10}$

ascending .... , ... , ... , ... , ...

descending .... , ... , ... , ... , ...

$\frac{12}{7}, \frac{12}{5}, \frac{12}{17}, \frac{12}{13}, \frac{12}{15}$

ascending .... , ... , ... , ... , ...

descending .... , ... , ... , ... , ...

$\frac{5}{9}, 1, \frac{2}{9}, \frac{7}{9}$

ascending .... , ... , ... , ...

descending .... , ... , ... , ...

$\frac{1}{2}, \frac{3}{4}, \frac{2}{3}$

ascending .... , ... , ...

descending .... , ... , ...

$5\frac{1}{5}, 4\frac{3}{4}, 4\frac{5}{8}, 5\frac{1}{2}$

ascending .... , ... , ... , ...

descending .... , ... , ... , ...

$5\frac{3}{8}, 5\frac{3}{4}, 6\frac{1}{2}$

ascending .... , ... , ...

descending .... , ... , ...

$2\frac{2}{5}, 2\frac{1}{3}, \frac{22}{9}$

ascending .... , ... , ...

descending .... , ... , ...

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1 ***Complete each of the following :***

[a] $37.258 \simeq$ .... (to the nearest hundredth)

[b] If : $\frac{3}{8} = \frac{a}{24}$, then a = ...

[c] $42.7935 \simeq 42.794$ to the nearest ....

[d] If : $\frac{16}{36} = \frac{4}{b}$, then b = ...

[e] $\frac{3}{500} \simeq$ .... (to the nearest hundredth)

2 ***Put the suitable relation (>) , (<) or (=) :***

[a] $\frac{7}{11}$ ☐ $\frac{5}{11}$

[b] $1\frac{9}{10}$ ☐ $2\frac{1}{10}$

[c] 1 ☐ $\frac{3}{5}$

[d] $\frac{3}{4}$ ☐ $\frac{5}{6}$

[e] 3.2 ☐ $3\frac{1}{2}$

[f] $\frac{61}{8}$ ☐ $7\frac{1}{2}$

3 ***Arrange each of the following in an ascending order :***

[a] $\frac{11}{7}$, $\frac{11}{13}$, $\frac{11}{18}$, $\frac{11}{5}$, $\frac{11}{9}$

....

[b] $5\frac{2}{5}$, 7.3 , $5\frac{3}{7}$, 6 , $7\frac{1}{5}$

....

[c] $11\frac{4}{7}$, 6.7 , 5 , $11\frac{2}{3}$, $6\frac{3}{4}$

....

4 ***Write the smallest decimal fraction which consists of 3 , 9 , 2 , 4 , then approximate it to the nearest thousandth.***

....

5 ***Find the values of x that satisfies the relation $\frac{9}{8} > \frac{x}{8} > \frac{3}{8}$ such that x is a whole number.***

....

Exercise 3

Multiplying fractions

1 Find the result of each of the following :

a $\frac{3}{4} \times \frac{3}{5} =$ ....

b $\frac{4}{5} \times \frac{6}{7} =$ ....

c $\frac{9}{10} \times \frac{3}{4} =$ ....

d $\frac{3}{7} \times \frac{3}{8} =$ ....

e $\frac{5}{9} \times \frac{2}{3} =$ ....

f $\frac{3}{5} \times \frac{15}{16} =$ ....

g $\frac{3}{5} \times \frac{15}{16} \times \frac{8}{9} =$ ....

h $\frac{5}{6} \times \frac{2}{7} \times \frac{21}{35} =$ ....

i $\frac{3}{14} \times \frac{7}{9} \times \frac{2}{3} =$ ....

j $\frac{13}{17} \times \frac{17}{8} \times \frac{12}{13} =$ ....

2 Multiply , then write the result in its simplest form :

a $\frac{2}{5} \times 5\frac{1}{2} =$ ....

b $3\frac{2}{3} \times \frac{5}{6} =$ ....

c $1\frac{2}{3} \times \frac{3}{10} =$ ....

d $\frac{3}{4} \times 4\frac{1}{4} =$ ....

e $4\frac{3}{4} \times \frac{1}{19} =$ ....

f $\frac{3}{4} \times 8\frac{2}{3} =$ ....

g $5\frac{1}{3} \times 3\frac{3}{8} =$ ....

h $5\frac{1}{2} \times 2\frac{2}{3} \times 1\frac{4}{11} =$ ....

i $\frac{2}{7} \times 21 =$ ....

j $9 \times \frac{5}{6} =$ ....

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Put the suitable sign (>) , (<) or (=) in the blanks :

a $\frac{8}{9} \times 9$ ☐ 8

b $\frac{1}{5} \times 15$ ☐ $\frac{1}{2} \times 8$

c $\frac{1}{4} \times \frac{4}{5}$ ☐ $\frac{1}{2} \times \frac{2}{5}$

d $7 \times \frac{1}{3}$ ☐ $2\frac{1}{3}$

e $\frac{15}{16} \times 4\frac{4}{9}$ ☐ $4\frac{1}{6}$

f $5\frac{1}{2} \times \frac{4}{11}$ ☐ 1

g $\frac{3}{5}$ of an hour ☐ 35 minutes

h $\frac{1}{2}$ of L.E. 30 ☐ $\frac{1}{5}$ of L.E. 80

Choose the correct answer between brackets :

a $7\frac{1}{2} \times \frac{1}{15} =$ .... (2 or $\frac{1}{2}$ or $\frac{16}{17}$ or $7\frac{1}{30}$)

b $\frac{4}{5} \times \frac{5}{7} \times \frac{7}{8} =$ .... ($\frac{1}{2}$ or $\frac{5}{8}$ or $\frac{4}{7}$ or $\frac{16}{20}$)

c $4\frac{1}{2} \times \frac{8}{27} =$ .... ($\frac{17}{29}$ or $4\frac{80}{54}$ or $1\frac{1}{3}$ or $4\frac{4}{27}$)

d $4\frac{1}{2} \times 2\frac{2}{3} =$ .... (12 or $8\frac{1}{3}$ or $5\frac{2}{5}$ or $\frac{17}{6}$)

e $3\frac{1}{2} \times 2\frac{1}{2} =$ .... ($6\frac{1}{4}$ or $8\frac{3}{4}$ or $6\frac{3}{4}$ or 3)

f $1\frac{1}{4} \times 1\frac{1}{5} \times 1\frac{1}{6} =$ .... ($1\frac{3}{4}$ or $1\frac{1}{120}$ or $1\frac{1}{15}$ or $1\frac{1}{5}$)

g $\frac{5}{8}$ of a day = ... hours. (18 or 17 or 15 or 20)

Find the missing numbers :

(a) $\frac{3}{......} \times \frac{4}{5} = \frac{12}{35}$

(b) $\frac{1}{4} \times \frac{......}{3} = \frac{7}{12}$

(c) $\frac{3}{5} \times$ .... $= \frac{6}{15}$

(d) $\frac{2}{7} \times$ .... $= \frac{10}{49}$

(e) .... $\times \frac{3}{8} = \frac{15}{24}$

(f) $1\frac{1}{5} \times$ .... $= 1$

(g) $3\frac{1}{2} \times$ .... $= 7$

(h) $10\frac{1}{4} \times$ .... $= 41$

The width of a rectangle is $\frac{2}{5}$ of its length , if the length of the rectangle is 20 cm. , find the width of the rectangle then find its area.

....

....

1 ***Complete each of the following :***

[a] $\frac{1}{2} \times \frac{4}{5} =$ ....

[b] $16 \times \frac{5}{8} =$ ....

[c] $3\frac{2}{5} \times 4\frac{1}{2} =$ ....

[d] $\frac{5}{20} \times \frac{4}{5} =$ ....

---

2 ***Choose the correct answer :***

[a] $\frac{3}{4} \times 1\frac{1}{2} =$ .... ($\frac{9}{8}$ *or* $\frac{1}{2}$ *or* $\frac{6}{10}$ *or* $\frac{5}{4}$)

[b] $1\frac{3}{7}$ .... $1\frac{4}{7}$ ($>$ *or* $<$ *or* $=$)

[c] $93.4987 \simeq$ .... to the nearest thousandth.

(93.40 *or* 93.50 *or* 93.499 *or* 93.5)

[d] If : $\frac{6}{13} < \frac{x}{13} < \frac{8}{13}$, then $x =$ .... (6 *or* 7 *or* 8 *or* 13)

---

3 ***Find the result of each of the following :***

[a] $3\frac{1}{6} \times \frac{12}{19} =$ ....

[b] $\frac{13}{10} \times \frac{5}{26} =$ ....

---

4 ***A car covers equal distances in equal times if this car covered 80.25 km. in one hour. How many km. are covered in $2\frac{1}{2}$ hours ?***

....

....

---

5 If : $x = 13.0725$, $y = 25.725$ Find $x + y$ to the nearest thousandth.

....

....

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Exercise 4

Dividing fractions

1 Write the reciprocal of each of the following :

a $\frac{1}{2}$ .... b $\frac{2}{3}$ .... c 7 ....

d 1 .... e $1\frac{1}{4}$ .... f $2\frac{5}{7}$ ....

2 Find the result of each of the following :

a $6 \div \frac{1}{3} =$ .... × .... = ...

b $12 \div \frac{3}{4} =$ .... = ...

c $10 \div \frac{5}{7} =$ .... = ...

d $\frac{1}{4} \div 2 =$ .... = ...

e $\frac{3}{5} \div 6 =$ .... = ...

f $\frac{6}{7} \div 18 =$ .... = ...

g $\frac{1}{3} \div \frac{3}{8} =$ .... = ...

h $\frac{6}{7} \div \frac{8}{21} =$ .... = ...

i $\frac{5}{6} \div \frac{25}{36} =$ .... = ...

j $8 \div 1\frac{3}{5} =$ .... ÷ .... = ... × .... = ...

k $6 \div 1\frac{1}{2} =$ .... = ... = ...

l $6\frac{2}{3} \div \frac{5}{6} =$ .... = ... = ...

m $3\frac{3}{4} \div 7\frac{1}{2} =$ .... = ... = ...

n $6\frac{1}{2} \div 3\frac{1}{4} =$ .... = ... = ...

o $1\frac{2}{5} \div 5\frac{5}{7} =$ .... = ... = ...

3 Choose the correct answer between brackets :

a The reciprocal of $\frac{1}{3} \div 4$ is .... ($4\frac{1}{3}$ *or* 7 *or* $2\frac{1}{3}$ *or* $\frac{3}{13}$)

b $2 \div \frac{1}{4} =$ .... (2 *or* 8 *or* 1 *or* $\frac{1}{2}$)

c $15\frac{3}{4} \div 7 =$ .... ($2\frac{1}{8}$ *or* $2\frac{1}{4}$ *or* $4\frac{1}{2}$ *or* $2\frac{1}{2}$)

d $\left(3\frac{1}{2} + 6\frac{1}{2}\right) \div \frac{1}{10} =$ .... (1000 *or* 1 *or* 10 *or* 100)

e $4\frac{2}{5} \div 5\frac{1}{2} =$ .... ($\frac{4}{5}$ *or* 0 *or* $\frac{5}{4}$ *or* 1)

4 **Put the suitable sign (>) , (<) or (=) in the blanks :**

a) $3 \div \frac{1}{3}$ ☐ 8

b) $\frac{3}{4} \div \frac{2}{3}$ ☐ $\frac{5}{7}$

c) $\frac{1}{9} \times \frac{3}{8}$ ☐ $\frac{3}{4} \div 18$

d) $6\frac{1}{4} \div 1\frac{1}{4}$ ☐ 6

e) $11\frac{1}{4}$ ☐ $9 \div \frac{4}{5}$

f) $6 \div \frac{3}{4}$ ☐ $\frac{2}{3} \times 12$

g) $1\frac{2}{9} \div 2\frac{3}{4}$ ☐ $2\frac{3}{5} \times 2\frac{4}{5}$

h) $2\frac{1}{4} \div 3\frac{3}{8}$ ☐ $2\frac{2}{3} \div 2\frac{2}{3}$

5 **Complete each of the following :**

a) $\frac{3}{5} \times$ .... $= 1$

b) .... $\times \frac{7}{8} = 1$

c) .... $\times 1\frac{1}{5} = 1$

d) $5\frac{3}{4} \div$ .... $= 1$

e) $3\frac{1}{2} \div$ .... $= \frac{5}{8}$

f) .... $\div 1\frac{5}{7} = 5$

If the price of 14 pens is L.E. $10\frac{1}{2}$, find the price of each pen.

....

How many persons can share 4 pizzas if each person gets $\frac{1}{2}$ of a pizza ?

....

If the length of four pieces of cloth is $13\frac{1}{3}$ metres , find the length of each piece.

....

A man earns L.E. $14\frac{1}{4}$ in 3 days. How much does he earn in one day ?

....

How many quarters of a pound are there in ten pounds and a half ?

....

How many $\frac{1}{6}$'s are there in $2\frac{1}{2}$ apples ?

....

The perimeter of a square is $\frac{6}{11}$ m.

Find the length of each side of the square.

....

1 ***Complete the following :***

[a] $1 - 0.999 =$ ………………… $\simeq$ ………… $\left(\text{to the nearest } \frac{1}{10}\right)$

[b] $\frac{4}{5} \div \frac{1}{2} =$ …………

[c] $\frac{\dots\dots}{2} \times \frac{4}{5} = \frac{6}{5}$

[d] $\frac{1}{6} +$ ………… $= \frac{1}{4}$

---

2 ***Put (>) , (<) or (=) :***

[a] 10 halves ☐ 20 fifth

[b] $\frac{4}{5}$ ☐ $\frac{2}{3}$

[c] $7 \times \frac{1}{3}$ ☐ $2\frac{1}{3}$

[d] $2\frac{1}{2} \div 4$ ☐ $\frac{7}{8}$

---

3 ***Arrange the following numbers ascendingly :***

$14\frac{1}{4}$, 15.025 , 14.375 , $14\frac{1}{8}$

……………………………………………………………………………………………

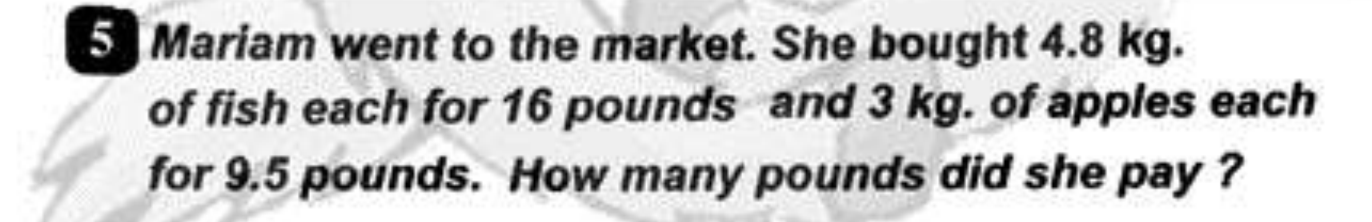
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4 **The perimeter of a square is $\frac{8}{11}$ m.**

Find the length of each side of the square.

……………………………………………………………………………………………

……………………………………………………………………………………………



5 ***Mariam went to the market. She bought 4.8 kg. of fish each for 16 pounds and 3 kg. of apples each for 9.5 pounds. How many pounds did she pay ?***

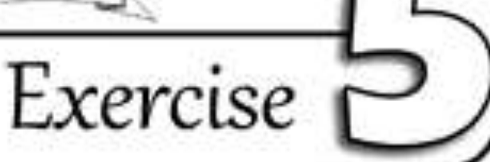
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Exercise 5

Multiplying decimals by 10 , 100 and 1000

1 Find the result of each of the following :

a. 0.643 × 100 = ...
b. 3.54 × 10 = ...
c. 2.8 × 10 = ...
d. 12.65 × 10 = ...
e. 0.045 × 100 = ...
f. 2.6753 × 1000 = ...
g. 100 × 7.787 = ...
h. 0.762 × 1000 = ...
i. 1000 × 6.7 = ...
j. 24.61 × 1000 = ...

2 Choose the correct answer :

a. 5.67 × 10 = ... (567 *or* 0.567 *or* 56.7 *or* 0.0567)
b. 98.7 × 100 = ... (987 *or* 9870 *or* 0.987 *or* 0.0987)
c. 6.172 × 100 = ... (617.2 *or* 61.72 *or* 6172 *or* 0.06172)
d. 0.067 × 1000 = ... (6.7 *or* 67 *or* 0.067 *or* 670)
e. 21.3 × 10 = ... (2130 *or* 2.13 *or* 213 *or* 0.0213)
f. 0.00008 × 1000 = ... (0.8 *or* 0.08 *or* 8 *or* 80)
g. 0.27 × 100 = ... (2.7 *or* 270 *or* 0.027 *or* 27)
h. 55.423 × .... = 5542.3 (10 *or* 100 *or* 1000 *or* 10000)
i. 0.021 × .... = 21 (10 *or* 100 *or* 1000 *or* 10000)

3 Complete :

a. 25.69 × .... = 256.9
b. 4.321 × .... = 4321
c. .... × 0.254 = 2.54
d. 7.5 × .... = 750
e. 2.63 × .... = 2630
f. 0.6201 × .... = 620.1
g. 0.9063 × .... = 906.3
h. .... × 1000 = 25.42

4 Put the suitable sign [< or > or =] :

a. 2.4 × 10 ☐ 0.24 × 100
b. 0.35 × 100 ☐ 3.5 × 10
c. 6.08 × 1000 ☐ 60.8 × 10
d. 9.15 × 100 ☐ 91.5 × 100
e. 0.723 × 1000 ☐ 0.0723 × 100
f. 57.12 × 10 ☐ 5.712 × 1000
g. 1.25 × 100 ☐ 0.0125 × 10
h. 524.8 × 0.1 ☐ 0.5248 × 100

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Complete :

a 87.02 km. = ... = ... m.

b 3.2 kg. = ... = ... gm.

c 2.05 m. = ... = ... cm.

d L.E. 6.5 = ... = P.T. ....

e 24.5 m. = ... = ... cm.

f 2.589 m. = ... = ... cm.

Complete :

a $(23.1 + 4.28) \times 10 =$ .... = ...

b $(375.24 \times 100) - 8296.27 =$ .... = ...

c $(32.4 - 5.62) \times 100 =$ .... = ...

d $5.26 \times 10 - 14.64 =$ .... = ...

Mona saves L.E. 7.75 from her pocket money in a month.

Calculate how much money she saves in 100 months.

....

....

If the length of a rectangle

is 15.75 cm. and its width is 10 cm.

Find its area to the nearest cm^2.

15.75 cm.

10 cm.

....

....

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1 ***Complete each of the following :***

[a] $32.563 \times 100 =$ ....

[b] $25.0825 \simeq$ .... (to the nearest thousandth)

[c] 7.003 kg = ... gm

[d] $\frac{3}{7} = \frac{x}{21}$, then $x =$ ....

[e] $4\frac{5}{8} \simeq$ .... (to the nearest hundredth)

2 ***Choose the correct answer :***

[a] $7.04 \times$ .... $= 704$ (10 *or* 100 *or* 1 000 *or* 10 000)

[b] 4.162×100 .... 41.62 (> *or* < *or* =)

[c] $3\frac{1}{8}$ .... 3.2 (> *or* < *or* =)

[d] $37.756 \simeq 37.76$ to the nearest ....

(tenth *or* hundredth *or* thousandth *or* unit)

[e] 32.531×10 .... $0.32531 \times 1\,000$ (> *or* < *or* =)

3 ***Arrange each of the following in a descending order :***

[a] $\frac{9}{7}$, $\frac{2}{7}$, $\frac{5}{7}$, $\frac{11}{7}$ and 1

....

[b] 3.5 , $5\frac{3}{4}$, 4 , $3\frac{2}{3}$, $5\frac{2}{7}$

....

4 ***Write the smallest decimal fraction which consists of 3 , 4 , 2 and 8 , then approximate it to the nearest thousandth.***

....

5 ***Complete the following :***

[a] $(37.21 + 3.4) \times 10 =$ .... $\times$ .... $=$ ....

[b] $(7.742 \times 100) - 32.4 =$ .... $-$ .... $=$ ....





1 Find the result of each of the following :

a 27.54 ÷ 10 = ……… **b** 400.5 ÷ 100 = ………

c 536.5 ÷ 100 = ……… **d** 700.2 ÷ 10 = ………

e 29.74 ÷ 10 = ……… **f** 4567.8 ÷ 1000 = ………

g 9.6 ÷ 10 = ……… **h** 8.7 ÷ 100 = ………

i 852.9 ÷ 1000 = ……… **j** 68.3 ÷ 100 = ………

k 0.44 ÷ 100 = ……… **l** 0.2 ÷ 10 = ………

m 387.25 ÷ 1000 = ……… **n** 3.6 ÷ 1000 = ………

o 11.9 ÷ 1000 = ……… **p** 0.05 ÷ 100 = ………

q 0.093 ÷ 1000 = ……… **r** 48.2 ÷ 10000 = ………

2 Choose the correct answer :

a 3.75 ÷ 100 = ……… (0.375 *or* 0.00375 *or* 37.5 *or* 0.0375)

b 37.6 ÷ 10 = ……… (0.376 *or* 3.76 *or* 0.0376 *or* 0.00376)

c 0.0398 ÷ 100 = ……… (0.00398 *or* 39.8 *or* 0.398 *or* 0.000398)

d 5743.4 ÷ 1000 = ……… (5.7434 *or* 574.34 *or* 57.434 *or* 0.57434)

e 7.56 ÷ 10 = ……… (0.756 *or* 75.6 *or* 7.56 *or* 0.0756)

f 345.6 ÷ 1000 = ……… (3.456 *or* 34.56 *or* 0.3456 *or* 0.03456)

g 42.25 ÷ ……… = 4.225 (10 *or* 100 *or* 1000 *or* 10000)

h 498.1 ÷ ……… = 0.04981 (10 *or* 100 *or* 1000 *or* 10000)

3 Put the suitable sign (>), (<) or (=) in the blanks :

a 136.76 ÷ 100 ☐ 1367.4 ÷ 1000 **b** 608.3 ÷ 100 ☐ 508.7 ÷ 10

c 34.69 ÷ 10 ☐ 346.9 ÷ 100 **d** 27.65 ÷ 10 ☐ 2.765 ÷ 10

e 3.5 ÷ 10 ☐ 0.35 ÷ 100 **f** 4034 ÷ 1000 ☐ 403.4 ÷ 10

4 **Complete :**

a) 37.9 ÷ .... = 3.79

b) 17.55 ÷ .... = 0.1755

c) 5879 ÷ .... = 58.79

d) 9876.2 ÷ .... = 9.8762

e) 21 ÷ .... = 0.021

f) 0.1 ÷ .... = 0.001

g) 72 ÷ .... = 0.0072

h) .... ÷ 10 = 17.35

i) .... ÷ 100 = 4.599

j) .... ÷ 100 = 0.002

5 **Complete each of the following :**

a) 25 cm. = ... = ... dm.

b) 7 cm^3. = ... = ... litre.

c) 0.7 gm. = ... = ... kg.

d) 80 cm. = ... = ... m.

e) P.T. 561.5 = ... = L.E. ....

f) 96 kg. = ... = ... ton.

A car consumes one litre of gasoline to travel 10 kilometres.

How many litres of gasoline does it need to travel a distance of 534.8 kilometres ?

....

....

A bicycle covered 45.8 m. in ten seconds.

How many metres did it cover in one second ?

....

....

A piece of cloth of length 345.6 metres is distributed among hundred poor men. **How many metres did each one take ?**

....

....

1 Complete the following :

[a] $8.4 \div 10 =$ ....

[b] $3.6 \div 100 =$ ....

[c] 372.5 m. = ... km.

[d] $\frac{3}{8} \div \frac{3}{4} =$ ....

[e] $9.9998 \simeq$ .... to the nearest thousandth.

---

2 Choose the correct answer :

[a] 572.4 cm. to the nearest metre = ... (6 *or* 50 *or* 60 *or* 572)

[b] $\frac{5}{9}$ .... $\frac{7}{11}$ (> *or* < *or* =)

[c] 9.612×100 .... $9\,612 \div 100$ (> *or* < *or* =)

[d] $4.25 \div$ .... $= 8\frac{1}{2}$ (2 *or* 4 *or* $\frac{1}{2}$ *or* $\frac{1}{4}$)

[e] $1\frac{1}{2} \div \frac{1}{4} =$ .... (2 *or* 6 *or* $\frac{3}{8}$ *or* 12)

---

3 Arrange the following numbers ascendingly :

$\frac{11}{12}$, $\frac{5}{12}$, $\frac{3}{4}$, $\frac{2}{3}$ and $\frac{5}{6}$

....

---

4 *A road is of length 64 983 m. Find its length in kilometres approximating the result to the nearest hundredth.*

....

---

5 *Dina bought 5 pens , the price of each is $\frac{3}{5}$ pound and two books the price of each $4\frac{3}{4}$ pounds if she had 15 pounds , how many pounds were left with her ?*

....

....

....

Exercise 7

Multiplying Decimals

Place the decimal point in each product as in (a). You may have to write zeroes in the product.

a) $6.2 \times 2.1 = 13.02$

b) $2.5 \times 2.6 = 650$

c) $4.3 \times 86 = 3698$

d) $41.2 \times 0.7 = 2884$

e) $392 \times 5.6 = 21952$

f) $69.5 \times 0.47 = 32665$

Multiply :

a	b	c	d
0.15×2 = ...	0.67×3 = ...	0.0647×0.3 = ...	4.27×0.7 = ...

e	f	g	h
17.6×0.05	98.21×0.11	2.41×0.68	6.461×28
....	....	....	....
....	....	....	....
....	....	....	....

Find the result of each of the following :

a) $75 \times 0.1 =$ ....

b) $342 \times 0.01 =$ ....

c) $9246 \times 0.001 =$ ....

d) $36.25 \times 0.1 =$ ....

e) $1.2 \times 0.4 =$ ....

f) $725.6 \times 0.001 =$ ....

g) $0.6 \times 0.3 =$ ....

h) $8.5 \times 0.5 =$ ....

i) $1.6 \times 0.04 =$ ....

j) $1.5 \times 0.4 =$ ....

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Choose the correct answer :

a) $2.3 \times 4 =$ .... (9.2 *or* 92 *or* 82 *or* 7.2)

b) $0.2 \times 6.3 =$ .... (1.26 *or* 12.6 *or* 126 *or* 1.36)

c) $0.56 \times 0.2 =$ .... (11.12 *or* 0.112 *or* 11.2 *or* 0.0112)

d) $0.676 \times 0.1 =$ .... (67.6 *or* 0.0676 *or* 16.76 *or* 6706)

e) $0.555 \times 0.3 =$ .... (0.1665 *or* 1.665 *or* 16.65 *or* 166.5)

f) $0.93 \times 0.6 =$ .... (0.558 *or* 5.58 *or* 55.8 *or* 558)

g) $3.4 \times 6.2 =$ .... (2.108 *or* 21.08 *or* 210.8 *or* 2108)

Put the suitable sign [< , > or =] :

a) 0.3×1.5 ☐ 3×0.5

b) 7.5×0.02 ☐ 7.5×0.2

c) 13.6×0.4 ☐ 0.136×0.4

d) 7.3×0.28 ☐ 0.73×2.8

e) 0.342×1.2 ☐ 3.42×0.12

f) 172×0.003 ☐ 0.172×0.3

g) 48.2×3.7 ☐ 4.82×37

h) 4.2×1.53 ☐ 4.2×15.3

Find the product :

(a) $2.3 \times 7.4 =$ ....

(b) $7.4 \times 0.59 =$ ....

Use the resulted products to find the value of :

First : $(2.3 \times 7.4) \times 0.59 =$ ....

Second : $2.3 \times (7.4 \times 5.9) =$ ....

Sara bought 5 books for L.E. 15.5 each.

What is the price of these 5 books ?

....

Karim wants to buy 3 T-shirts that cost L.E. 45.75 eacl
How much will they cost together ?

....

The price of a bar of chocolate is L.E. 2.75 ,
what is the cost of 15 bars of the same kind ?

....

If the price of one metre of cloth is L.E. 6.45 ,
what is the cost of 2.4 metres of cloth ?

....

Abdo bought 5.25 kg. of oranges. If the price of each kilogram is L.E. 6.75
, calculate the price of what he bought to the nearest pound.

....

Ahmed bought 12 cans of juice. The price of each can was L.E. 1.75
What is the total cost of the juice ?
How much would the seller pay back to Ahmed if he paid him L.E. 30 ?

....

Mariam went to the market. She bought 4.5 kilograms of fish each for L.E. 15
and 6 kilograms of apples each for L.E. 5.5 How much money did she pay ?

....

A car covers equal distances in equal times. How many kilometres does
it cover in 2 hours and 15 minutes
if its speed is 73.25 kilometres per hour ?

....

1 ***Complete each of the following :***

[a] $\begin{array}{r} 0.07 \\ \times\ 0.5 \\ \hline \dots\dots \end{array}$ [b] $\begin{array}{r} 6.3 \\ \times\ 0.04 \\ \hline \dots\dots \end{array}$ [c] $\begin{array}{r} 3.21 \\ \times\ 0.003 \\ \hline \dots\dots \end{array}$

[d] $7.421 \times 10 =$ ....

[e] $7.532 \simeq$ .... (to the nearest hundredth)

2 ***Choose the correct answer :***

[a] $2.3 \times 0.004 =$ .... (92 *or* 0.92 *or* 0.0092 *or* 0.092)

[b] $136.592 \simeq 136.6$ to the nearest .... (ten *or* tenth *or* hundredth *or* unit)

[c] $\frac{3}{8}$ .... 0.35 (> *or* < *or* =)

[d] 47.325×10 .... 4.7325×100 (< *or* = *or* >)

[e] $426.305 \simeq$ .... (to the nearest hundredth)

(400 *or* 426.30 *or* 426.31 *or* 426.305)

3 ***Find the product in each of the following :***

[a] $5.4 \times 3.2 =$ ....

[c] $8.12 \times 6.12 =$ ....

[b] $4.75 \times 1.9 =$ ....

[d] $3.4 \times 2\frac{1}{4} =$ ....

4 ***Find the area of the rectangle , its dimensions are 2.4 cm. and 4.5 cm. approximating the result to the nearest unit.***

....

....

5 ***If the price of one metre of cloth is 7.75 pounds find the price of 2.25 metres of this cloth approximated to the nearest pound.***

....

....

Exercise 8

Dividing by a 3-digit number

Divide :

56 ⟌ 168	73 ⟌ 584	38 ⟌ 304
39 ⟌ 312	27 ⟌ 162	69 ⟌ 414
78 ⟌ 702	63 ⟌ 441	19 ⟌ 152
58 ⟌ 174	66 ⟌ 528	28 ⟌ 196
157 ⟌ 1256	792 ⟌ 3168	103 ⟌ 721
869 ⟌ 6952	468 ⟌ 4212	665 ⟌ 5320

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Divide :

4168 ÷ 521	4368 ÷ 728	1032 ÷ 258
4260 ÷ 852	1917 ÷ 639	4440 ÷ 888
1000 ÷ 125	3750 ÷ 625	3015 ÷ 335
6345 ÷ 705	7668 ÷ 852	4345 ÷ 869
5568 ÷ 928	2496 ÷ 312	2968 ÷ 371
3440 ÷ 688	2430 ÷ 405	2780 ÷ 695
7960 ÷ 995	2952 ÷ 492	2052 ÷ 684

Divide :

82 ⟌ 2788	64 ⟌ 3008	97 ⟌ 3395
59 ⟌ 2242	68 ⟌ 4420	28 ⟌ 1708
37 ⟌ 3108	34 ⟌ 1292	56 ⟌ 4368
45 ⟌ 3870	87 ⟌ 2784	93 ⟌ 4464
67 ⟌ 6432	49 ⟌ 2303	79 ⟌ 3871

Divide :

356 ⟌ 87220	732 ⟌ 25620	485 ⟌ 15520
448 ⟌ 42112	723 ⟌ 48441	754 ⟌ 44486
782 ⟌ 14858	125 ⟌ 10625	555 ⟌ 26640
752 ⟌ 181232	852 ⟌ 402144	954 ⟌ 412128
426 ⟌ 321204	157 ⟌ 66411	348 ⟌ 87348

1 ***Complete the following :***

[a] The number 14.669 ≃ 14.67 to the nearest ....

[b] $7.225 \times 10 =$ .... ≃ .... (to the nearest tenth)

[c] $1\,845 \div 123 =$ ....

[d] $0.97 \times 0.05 =$ ....

[e] $75.351 \div 100 =$ ....

---

2 ***Choose the correct answer :***

[a] $6\,020 \div 215 =$ .... (34 *or* 32 *or* 28 *or* 26)

[b] 0.342×1.2 .... 3.42×0.12 (< *or* = *or* >)

[c] $1\frac{3}{7}$ .... $1\frac{5}{11}$ (< *or* = *or* >)

[d] $973.41 \div$ .... $= 0.97341$ (10 *or* 100 *or* 1 000 *or* 10 000)

[e] $8\,120 \div 145 =$ .... (58 *or* 56 *or* 54 *or* 52)

---

3 ***Ahmed bought 12 cans of juice , the price of each one is 1.85 pounds. How much money did Ahmed pay ?***

....

If Ahmed paid 30 pounds to the seller , how much money did the seller repay to Ahmed ?

....

---

4 ***A truck can carry 162 boxes. Find the number of trips needed to transport 19 440 boxes.***

....

---

5 ***Find the result :***

[a] $5\frac{1}{2} \div 3\frac{2}{3} =$ ....

[b] $9\frac{1}{3} \times \frac{2}{6} =$ ....

[c] $19\,968 \div 256 =$ ....

Exercise 

Dividing by a decimal

1 **Complete each of the following as in the example :**

a 4.2 ÷ 0.7 = ... ÷ .... = ...

b 3.6 ÷ 0.4 = ... ÷ .... = ...

c 0.8 ÷ 0.2 = ... ÷ .... = ...

d 0.28 ÷ 0.04 = ... ÷ .... = ...

e 0.75 ÷ 0.25 = ... ÷ .... = ...

f 27.2 ÷ 0.8 = ... ÷ .... = ...

2 **Complete each of the following as in the example :**

a 94.5 ÷ 3.5 = ... ÷ .... = ...

b 55.33 ÷ 0.11 = ... ÷ .... = ...

c 30.24 ÷ 3.6 = ... ÷ .... = ...

d 36.18 ÷ 0.09 = ... ÷ .... = ...

e 4.6057 ÷ 0.079 = ... ÷ .... = ...

3 **Put the suitable sign (>) , (<) or (=) in the blanks :**

a 0.6 ÷ 0.125 ☐ 6 ÷ 0.125

b 55 ÷ 1.1 ☐ 55 ÷ 0.11

c 3838 ÷ 38.38 ☐ 38.38 ÷ 3838

d 462.3 ÷ 0.23 ☐ 4623 ÷ 2.3

e 1024 ÷ 64 ☐ 10.24 ÷ 0.64

f 882 ÷ 4.5 ☐ 88.2 ÷ 45

g 756 ÷ 5.4 ☐ 75.6 ÷ 0.054

4 **Choose the correct answer :**

a 48.24 ÷ 1.2 = ... (4.2 *or* 40.2 *or* 14.0 *or* 142)

b 87.5 ÷ 8.75 = ... (1 *or* 10 *or* 0.1 *or* 100)

c 4.8 ÷ 0.16 = ... (3 *or* 30 *or* 300 *or* 0.3)

d 4.5 ÷ .... = 9 (5 *or* 0.5 *or* 9 *or* 0.9)

e 728.14 ÷ 0.7 = ... (104.02 *or* 1040.2 *or* 10.402 *or* 10402)

f 54.45 ÷ 0.9 = ... (60.5 *or* 605 *or* 0.605 *or* 6.05)

The length of a roll of cloth is 53.55 metres. It was divided into equal parts where the length of each part is 3.15 metres.

Find the number of these parts.

....

....

A train covered a distance of 221.65 km. in 2.75 hours.

Calculate the distance it covers in one hour.

....

....

If L.E. 362.5 is distributed among the excellent pupils and each of them takes L.E. 14.5 Find the number of excellent pupils.

....

....

A building has the height of 42.75 metres. If the height of each floor is 2.85 metres , then find the number of floors.

....

....



1 Complete the following :

[a] $16.4 \div 0.4 =$ ....

[b] $\frac{3}{4} \div \frac{5}{8} =$ ....

[c] $6\frac{1}{2} \times 2\frac{2}{5} =$ ....

[d] $74.632 \times 100 =$ ....

[e] $56.431 + 2.115 =$ .... $\simeq$ .... (to the nearest hundredth)

2 Choose the correct answer :

[a] 8.46 dm. = ... cm. (846 *or* 0.846 *or* 84.6 *or* 8 460)

[b] 172×0.003 .... 0.172×0.3 (< *or* = *or* >)

[c] $\frac{2}{5} <$ .... ($\frac{2}{5}$ *or* $\frac{2}{3}$ *or* $\frac{2}{7}$ *or* $\frac{3}{8}$)

[d] $18.2 \div 1.3 =$ .... (13 *or* 14 *or* 15 *or* 16)

[e] $(0.325 + 9\frac{1}{4}) \div 100 =$ .... (0.9575 *or* 0.09575 *or* 322 *or* 0.95)

3 Find the result :

[a] $(92.36 - 63.25) \div 0.41$ .... ÷ .... = ...

[b] $32.7 \times 2.6 =$ ....



4 Find the number which if multiply by 0.52 the result will be 1.248

....

....

5 Find the area of the rectangle whose length is 13.25 m. and its width 6.14 m.

....

....

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Exercise 10

Infinite Division

1 Write each of the following fractions using a decimal point :

a $\frac{2}{5}$ = ... ÷ ...... = ...

b $\frac{7}{25}$ = ... ÷ ...... = ...

c $\frac{7}{8}$ = ... ÷ ...... = ...

d $\frac{11}{125}$ = ... ÷ ...... = ...

e $\frac{3}{20}$ = ... ÷ ...... = ...

f $\frac{97}{2}$ = ... ÷ ...... = ...

g $\frac{3}{4}$ = ... ÷ ...... = ...

h $\frac{100}{625}$ = ... ÷ ...... = ...

2 Divide each of the following, approximating the quotient to 1 decimal place :

a $\frac{1}{3}$ = ... ÷ ...... = ... ≃ ....

b $\frac{2}{3}$ = ... ÷ ...... = ... ≃ ....

c $\frac{5}{11}$ = ... ÷ ...... = ... ≃ ....

d 3 ÷ 11 = ... ≃ ....

e 15 ÷ 112 = ... ≃ ....

f 8 ÷ 7 = ... ≃ ....

g 57 ÷ 48 = ... ≃ ....

h 12929 ÷ 517 = ... ≃ ....

i 19912 ÷ 152 = ... ≃ ....

j 13 ÷ 123 = ... ≃ ....

Complete :

a $\frac{7}{3}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{10}$

b $\frac{5}{9}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{100}$

c $\frac{6}{11}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{100}$

d $\frac{9}{7}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{1000}$

e $\frac{11}{13}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{10}$

f $\frac{17}{121}$ = …… + …… = ……… ≃ ……… to the nearest $\frac{1}{100}$

A rich man left a heritage of L.E. 1256987 for his 8 sons.

What is the share of each son?

(give the answer approximated to the nearest L.E.)

……………………………………………………………………………………

……………………………………………………………………………………

Hany's father bought a flat for L.E. 125000 He paid L.E. 31250 in cash, and paid the rest in 144 equal instalments.

Find to the nearest L.E. the value of each instalment.

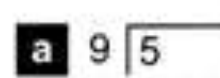
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3 Find the quotient approximated to the nearest hundredth :



a $9\overline{)5}$ ≃ ....

b $6\overline{)38}$ ≃ ....

c $46\overline{)2.8}$ ≃ ....

d $270\overline{)60}$ ≃ ....

4 Find the quotient approximated to the nearest thousandth :

a $7\overline{)2\ 8\ 5}$ ≃ ....

b $15\overline{)46}$ ≃ ....

c $12\overline{)365}$ ≃ ....

d $39\overline{)258.4}$ ≃ ....

Find the number which when multiplied by 117 , the result will be 2925

The product of multiplying 2 numbers is 9088 If one of them is 284, find the other number.

A shopkeeper saves L.E. 337 each month which he deposites in his bank account. After how many years he will save L.E. 16176 ?

An owner of a packing food factory wanted to pack 5904 kilograms of sugar equally in 492 packs. What is the weight of each pack ?

If the year is 365 days, how many years are there in 53655 days ?

A truck can carry 265 watermelons. Find the number of trips needed to transport 54060 watermelons.

A merchant paid L.E. 2975 to buy 119 boxes of apples. Find the price of each box and if each box contains 5 kg. of apples, so find the price of each kg.

First Completion questions

Complete each of the following :

1. $99.995 \simeq$ .... (to the nearest hundredth)
2. $45.27 + 28.3 =$ .... $\simeq$ .... (to the nearest $\frac{1}{10}$)
3. $426.305 + 67.19 =$ .... $\simeq$ .... (to the nearest hundredth)
4. $\frac{55}{1000} =$ .... $\simeq$ .... (to the nearest tenth)
5. $69.25 \times 10 =$ .... $\simeq$ .... (to the nearest whole number)
6. $\frac{125}{500} \simeq$ .... (to the nearest unit)
7. $3\frac{18}{500} =$ .... $\simeq$ .... (to the nearest $\frac{1}{100}$)
8. $9\frac{3}{25} =$ .... $\simeq$ .... (to the nearest tenth)
9. $4\frac{3}{5} =$ .... $\simeq$ .... (to the nearest whole number)
10. $8.43 \times 0.9 =$ .... $\simeq$ .... (to the nearest $\frac{1}{100}$)
11. $39\frac{2}{5} - 7.25 =$ .... $\simeq$ .... (to the nearest unit)
12. $4\frac{3}{4} - 2\frac{3}{20} =$ .... $\simeq$ .... (to the nearest unit)
13. The number $5.994 \simeq 5.99$ (to the nearest ....)
14. $3\,75 \times 1000 =$ ....
15. $73\,475 \div 100 =$ ....
16. $4\frac{1}{8} \times 2\frac{2}{3} =$ ....
17. $2\frac{1}{3} + \frac{5}{6} =$ ....
18. $(7.2 \times 5.2) + 17.4 =$ ....

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19. $(5.2 \times 11.2) \div 2.5 =$ ……… + ……… = ………

20. ……… $\times 100 = 42.5$

21. ……… $\div 10 = 324$

22. $1.761 +$ ……… $= 9.425$

23. 3.26 m. = ……… km.

24. 657 kilometres = ……… metres

25. 46.6 dm. = ……… cm.

26. $\frac{1}{2}$ km. = ……… m. = ……… cm.

27. 5.4 tons = ……… kg.

28. 39 days = ……… weeks (to the nearest week)

29.

Hour	Minute	Second	
7	44	60	= ……… hours

30. $\frac{2}{5} = \frac{a}{15}$, then : a = ………

Second Multiple - choice questions

Choose the correct answer from those given :

1. The number 276.532 to the nearest hundredth = ……… (277 *or* 276.53 *or* 276.54 *or* 276.5)
2. The greatest number in the following is ……… (0.111 *or* 0.12 *or* 0.123 *or* 1.023)
3. The smallest fraction in the following is ……… ($\frac{1}{3}$ *or* $\frac{5}{8}$ *or* $\frac{2}{9}$ *or* $\frac{2}{5}$)
4. $\frac{1}{2}$ ……… $\frac{1}{3}$ (> *or* = *or* <)
5. $5\frac{1}{8} \simeq$ ……… (to the nearest hundredth) (5.125 *or* 5.14 *or* 5.13 *or* 5.1)
6. $\frac{1}{4} \times 4 =$ ……… (2 *or* $\frac{1}{4}$ *or* $\frac{1}{2}$ *or* 1)
7. $22.22 \div 2 =$ ……… (11.11 *or* 10.01 *or* 22.22 *or* 1.111)
8. The quotient of dividing $5.45 \div 0.5 =$ ……… (1.9 *or* 1.09 *or* 10.9 *or* 109)

9. $8.25 \div 8\frac{1}{4} =$ .... (101 *or* 1 *or* 1.01 *or* 10.1)

10. $327 \div 24 = 3.27 \div$ .... (2.4 *or* 0.24 *or* 24 *or* 2004)

11. $\frac{1}{25} \times 50 \times 0.25 =$ .... (4 *or* $\frac{1}{4}$ *or* $\frac{1}{2}$ *or* 2)

12. Estimate the result of : $4.384 + 2.32 =$ .... (6 *or* 7 *or* 6.6 *or* 7.2)

13. The number of months in half a year = ... (6 *or* 3 *or* 5 *or* 9)

14. The number of days in 254 hours equals approximately .... (11 *or* 10 *or* 12 *or* 9)

15. The number of years in 69 months ≃ .... (5 *or* 6 *or* 7 *or* 4)

Third | Essay questions

Answer the following questions :

1. Arrange the following numbers ascendingly : $\frac{1}{4}$, 0.8 , 0.4 , $\frac{1}{2}$, $\frac{3}{4}$

2. Arrange the following numbers descendingly :
   3.4 , 0.0333 , 0.3033 , 3.333 , 0.3303

3. Arrange the following numbers descendingly : $5\frac{1}{2}$, $6\frac{1}{4}$, $5\frac{3}{4}$, $5\frac{1}{8}$, $5\frac{2}{5}$

4. Put the suitable relation (> , = , <) :

   (a) 4.79×1000 ☐ 47.9×100 (d) 2 dm. ☐ 200 cm.

   (b) 3.2×10 ☐ 0.32×1000 (e) 140.44 ☐ 34.044

   (c) $\frac{2}{5}$ m. ☐ $\frac{5}{2}$ m.

5. Find the result of the following :

   (a) $278.12 - 8 \times 2.4 =$ .... ≃ .... (to the nearest $\frac{1}{10}$)

   (b) $37.38 \div 100 =$ ....

   (c) $12\frac{1}{2} \div 6\frac{1}{4} =$ ....

(d) $\frac{3}{8} \times \frac{2}{9} =$ ....

(e) $12\frac{1}{2} \times \frac{4}{5} =$ ....

(f) $(10.555 - 8.245) \div 2.8 =$ ....

(g) $45.334 \times 100 =$ ....

(h) $\frac{17}{40} \div 0.85 =$ ....

(i) $9375 \div 15 =$ .... (j) $25.25 \div 0.25 =$ ....

6 If a = 18.24 , b = 8.354, find the result of a + b to the nearest hundreadth.

Estimate the result of a + b. Is your estimate accurate or not ?

....

....

7 Find the area of the rectangle if its dimensions are 2.4 and 4.5 cm., then approximate the result to the nearest unit.

....

....

8 The product of two numbers is 625 , if one of them is 25 , then what is the other number ?

....

....

9 The length of a piece of cloth is 9.25 m. 12 towels are made of it , the length of each towel is 0.75 m. How many metres are remainder ?

....

....

10 If the price of one metre of cloth is 7.35 pounds , what is the price of 3.5 metres ?

....

....

11 A car consumes one litre of gas to cover a distance of 10 km. How many litres are needed so that the car covers a distance of 642.9 km.?

....

....

12 Mahmoud bought a computer for 2 000 pounds. He paid 250 oounds cash money and divided the remainder into 50 equal monthly instalments. Calculate the value of each instalment.

....

....

13 A medical firm packed 6.25 litres of a medicine in bottles, each of them is of capacity 0.025 litre. How many bottles were used ?

....

....

14 Find the result of each of :

First : 2.4×4.7 ....

Second : 3.4×0.29 ....

then from the previous operations, find the value of :

(a) $(2.4 \times 4.7) \times 0.29$ ....

(b) $2.4 \times (3.4 \times 0.29)$ ....

Unit 2

SETS



What is a set ?

1 State which of the following is a set or not ?

	a set	not a set
a The colours of the Egyptian flag.	☐	☐
b Beautiful cities in Egypt.	☐	☐
c The fingers on your left hand.	☐	☐
d Rainbow colours.	☐	☐
e Intelligent pupils in the class.	☐	☐
f Digits of the number 1982	☐	☐
g Months in the Hejira calendar.	☐	☐
h The letters in the English alphabet.	☐	☐
i The letters in the word "Mathematics".	☐	☐
j Things in your bag.	☐	☐
k Arabic countries.	☐	☐
l Big numbers.	☐	☐
m Even numbers between 11 and 20	☐	☐
n Prime numbers between 1 and 15	☐	☐
o Days of the week.	☐	☐
p Months of the Christian year whose days are less than 31 days.	☐	☐
q The players of the national football team in 2020	☐	☐
r Short pupils in your class.	☐	☐
s Clever people living in Egypt.	☐	☐
t Seasons of the year.	☐	☐
u Fruits you have eaten in the last 12 hours.	☐	☐
v Presidents of Egypt Since 1952	☐	☐

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2 Write two elements only of each of the following sets :

a. The set of digits of the number 84715 ....
b. The set of letters of the word "elements". ....
c. The months of the Christain year. ....
d. The main directions. ....
e. African countries. ....
f. The set of even numbers. ....
g. The set of odd numbers. ....
h. Capitals of world countries. ....
i. Arabic currencies. ....
j. Geometric figures. ....
k. Mathematical operations. ....
l. Months of the Christian year beginning with the letter "A"
....
m. Arab countries on the Mediterranean Sea. ....
n. The whole numbers between 5 and 15 ....
o. The numbers consisting of two digits whose unit digit is 9
....
p. The number consisting of two digits whose units digit equals its tens digit.
....
q. The prime factors of 12 ....



1 Complete each of the following :

[a] $12\frac{1}{2} \times \frac{4}{5} =$ ....

[b] $45.334 \times 100 =$ ....

[c] $25.25 \div 0.25 =$ ....

[d] $72.358 \simeq$ .... to the nearest hundredth.

[e] $(7.2 \times 5.2) + 17.4 =$ ....

2 State of the following is a set and which is not a set :

[a] The colours of the Egyptian flag. ....

[b] The letters in the word "Egypt". ....

[c] Beautiful cities in Egypt. ....

[d] Intelligent pupils in your class. ....

[e] Days of the week. ....

3 Write the elements of the following sets :

[a] The set of digits of the number 74 581 ....

[b] The set of letters of the word "student". ....

[c] The whole numbers between 5 and 10 ....

[d] The even numbers less than 10 ....

[e] Factors of 6 ....

4 Find the result :

[a] $357.243 - (7 \times 3.5) =$ .... $-$ .... (to the nearest $\frac{1}{100}$)

$=$ .... $\simeq$ ....

[b] $12\frac{1}{2} \div 6\frac{1}{4} =$ ....

[c] $\frac{17}{40} + 0.85 =$ ....

5 Arrange the following in a descending order :

$\frac{1}{4}$, 0.8 , 0.4 , $\frac{1}{2}$, $\frac{3}{4}$

....

Exercise 2

Mathematical expression of a set

1 **Express each of the following sets by listing its elements :**

a A = The set of digits in the number 3501

....

b B = The set of digits in the number 34343

....

c C = The set of letters in the word "address".

....

d D = The set of letters in the word "Zaghlool".

....

e E = The set of the days in the week.

....

f F = The set of months of the year begining with "J"

....

g G = The set of the original four directions.

....

h H = The set of the rivers in Egypt.

....

i I = The set of seas around Egypt.

....

j J = The set of numbers on a dice.

....

k K = The set of the first five letters of the English alphabet.

....

2 **Express each of the following sets in words :**

a A = {z , i , a , e , b , n} ....

....

b B = {a , l , i} ....

....

c X = {2 , 4 , 6 , 8} ....

....

d Z = {2 , 3 , 5 , 7} ....

....

Representing sets by Venn diagram

Represent each of the following sets by a Venn diagram :

a X = {1 , 2 , 3}

b Y = {a , b , c , f}

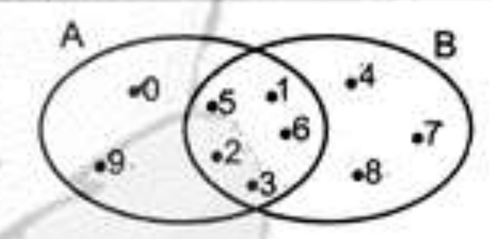
c L = The set of whole numbers smaller than 5

d N = The set of letters in the word "dad".

List the elements of each of the sets A and B :

A = {..}

B = {..}

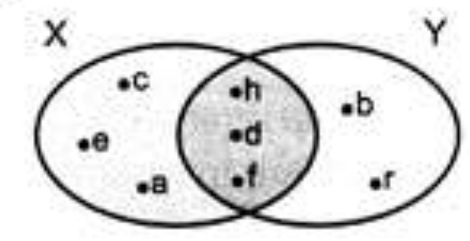


The figure below represents a Venn diagram for the two sets X and Y :

a List the elements of each of the sets X and Y :

X = {..}

Y = {..}



Considering the Venn diagram beside, answer the following questions :

a List the elements of R

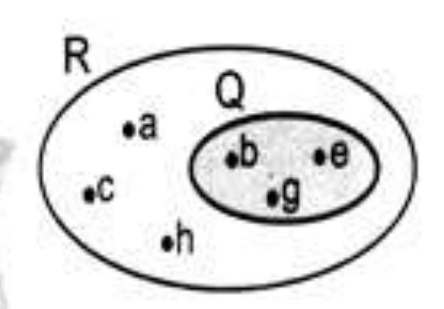
....

b List the elements of Q

....

c List the elements which are in R and not in Q

....

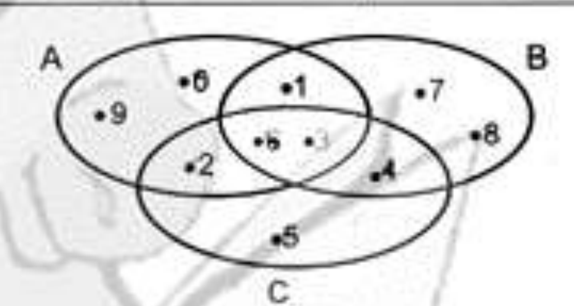


Using the Venn diagram below, list the elements of each of the sets A , B and C :

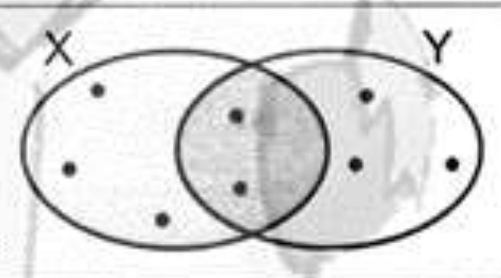
A = { .... }

B = { .... }

C = { .... }



If X = {7 , 9 , 15 , 3 , 5} ,
Y = {3 , 5 , 11 , 13 , 19}
Then the opposite figure represents the two sets X and Y , complete the Venn diagram.



Complete the opposite figure to be a Venn diagram for the two sets A and B :

A = {2 , 4 , 6 , 8} and

B = {3 , 4 , 5 , 6 , 7}



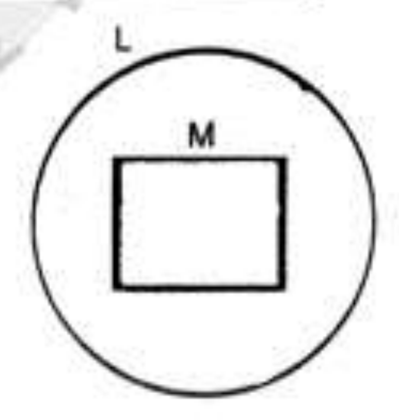
9 Complete the opposite figure to represent a Venn diagram for the two sets :

L = the set of whole numbers between 5 and 11

L = { .... }

M = the set of even whole numbers between 5 and 11

M = { .... }



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1 ***Complete each of the following :***

[a] 43 days ≃ .... to the nearest week. [b] .... × 75.34 = 753.4

[c] $\frac{2}{5} = \frac{a}{15}$, then a = ...

[d] $2\frac{1}{3} + \frac{5}{6}$ = ...

[e] $\frac{77}{1000}$ = ... ≃ .... (to the nearest hundredth)

2 ***Express each of the following sets by listing method :***

[a] A = the set of days of the week ....

[b] B = the set of digits of the number 32323 ....

[c] C = the set of letters of the word "door" ....

[d] D = the set of prime numbers less than 10 ....

[e] E = the set of even numbers between 7 and 17 ....

3 ***Express each of the following sets by description method :***

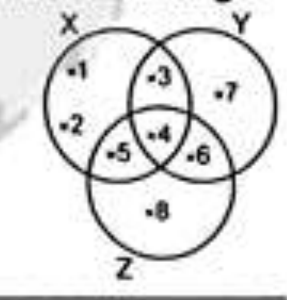
[a] A = {Port Said , Ismailia , Suez}

[b] B = {1 , 3 , 5}

[c] C = {11 , 13 , 17}

[d] D = {9 , 10 , 11 , 12}

4 ***Using the venn diagram below , list the element of each of the following :***



[a] X = ... [b] Y = ...

[c] Z = ...

[d] The set of the elements found in X and Y = ...

[e] The set of the elements found in X , Y and Z = ...

5 ***The length of a piece of cloth is 9.25 m. , 12 towels are made of it , the length of each towel is 0.75 m. How many metres are remainder ?***

....

....

Belonging of an element to a set

Complete using the suitable sign $\in$ or $\notin$:

a 3 .... $\{3, 5\}$	**b** 5 .... $\{2, 7, 12\}$
c 15 .... $\{5, 7, 13\}$	**d** m .... $\{x, m, \ell\}$
e △ .... {○, □, △}	**f** .... { , , }
g 17 .... $\{7, 17\}$	**h** 12 .... $\{1, 2\}$
i 6 .... $\{66\}$	**j** 99 .... $\{99\}$
k 0 .... $\{30, 40\}$	**l** 2 .... $\{12, 22\}$
m 69 .... $\{9, 6, 96\}$	**n** 11 .... $\{5116\}$
o m .... {Mohamed}	**p** $\frac{2}{5}$ .... $\{2, 5\}$

Complete using $\in$ or $\notin$:

(a) Y .... the set of the letters forming the word "Egypt".

(b) 3 .... the set of digits in the number 481

(c) 20 .... the set of digits in 2020

(d) 3 .... the set of odd numbers.

(e) 2.5 .... the set of whole numbers.

(f) March .... the set of the seasons of the year.

(g) 7 .... the set of the days of the week.

Complete :

a If $4 \in \{2, x, 5\}$, then $x =$ ....

b If $x \in \{5, 7\}$, then $x =$ ....

c If $x - 1 \in \{6\}$, then $x =$ ....

d If $b \notin \{7, 9\}$, then $b =$ ....

e If $3 \notin \{1, y, 4\}$, then $y =$ ....

f If $5 \in \{2 \quad 1 + x\}$, then $x =$ ....

g If $3 \notin \{6, 1 + x, 5\}$, then $x \neq$ ....

h If $y \notin \{3, 5\}$, then $y \neq$ ....

If X is a set where X = {2, 3, 5, 6}

Place the suitable symbol $\in$ or $\notin$ in the blanks to make each sentence true:

(a) 3 X
(b) 0 X
(c) 5 X
(d) 2 X
(e) 7 X
(f) 1 X
(g) 6 X
(h) 32 X

If : $A = \{1, 3, 5, 7, 9\}$ and $B = \{0, 2, 4, 6, 8\}$, put the suitable symbol $\in$ or $\notin$:

(a) 1 .... A
(b) 8 .... B
(c) 9 .... B
(d) 13 .... A
(e) 7 .... B
(f) 10 .... B

If C = all prime numbers , which of the following statements are true ?

(a) $7 \in C$ ....
(b) $51 \in C$ ....
(c) $24 \notin C$ ....
(d) $97 \notin C$ ....
(e) $23 \in C$ ....
(f) $31 \notin C$ ....

Complete :

(a) If $4 \in \{2, x, 5\}$, then $x =$ ....
(b) If $5 \in \{7, 9, x\}$, then $x =$ ....
(c) If $x \in \{5, 7\}$, then $x =$ ....
(d) If $x - 1 \in \{6\}$, then $x =$ ....
(e) If $6 \in \{5, x + 1\}$, then $x =$ ....
(f) If $5 \in \{3, 4 + x\}$, then $x =$ ....
(g) .... $\in \{3, 5, 10\}$ and belongs also to the set of prime factors of the number 6
(h) If $x \in \{2, 5, 7\}$ and belongs also to the set of digits of the number 352 , then $x =$ ....

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Put in front of each set one of the two words **"null" or "not null" :**

[1] The set of months of the Christian year of days which are more than 30 days.

[2] The set of Arabic countries in Australia.

[3] The set of Egyptian governorates in Asia.

[4] The set of students in your class who made a trip to the moon.

[5] The set of the governorates in Jpper Egypt that are located on the Mediterranean Sea.

[6] The set of triangles having 4 sides.

[7] The set of even numbers less than 2

[8] The set of prime factors of 7

[9] The set of odd numbers between 7 and 9

[10] The set of those numbers divisible by 7 and are between 8, 15

[11] The set of the factors of 15 which are divisible by 2

[12] The set of those numbers divisible by 5 and are between 5, 10

Put (✓) in the suitable position :

	Finite	Infinite
a The set of Arabic countries.	○	○
b The set of whole numbers whose units digit is 4	○	○
c The set of whole numbers formed from 2 digits.	○	○
d The set of fractions whose numerator is 1	○	○

Which of these sets is a finite set and which of them is an infinite set ?
Write the number of elements of every finite set as in [a] :

The Set	Finite	Number of elements	Infinite
The set of days in a week.	✓	7	✗
{0 , 3 , 6 , 9 , 12}	....	....	....
{30 , 32 , 34 , ...}	....	....	....
{1 , 3 , 5 , ... , 99}	....	....	....
The set of the months in a Gregorian year.	....	....	....
The set of dinosaurs in the zoo.	....	....	....
The set of pages of this book.	....	....	....
The set of the odd numbers	....	....	....
The set of cats with 3 heads.	....	....	....
The set of alphabet in the English language.	....	....	....
The set of multiples of the number 5	....	....	....
The set of prime numbers less than 20	....	....	....
The set of factors of the number 3	....	....	....
The set of prime even numbers.	....	....	....
The set of the letters forming the word "Sondos"	....	....	....
The set of counting number less than 10000	....	....	....
The set of counting numbers greater than 10000	....	....	....
The set of whole numbers which are divisible by 3	....	....	....

1 *Choose the correct answer :*

[a] The smallest fraction in the following is .... ($\frac{1}{3}$ or $\frac{5}{8}$ or $\frac{2}{9}$ or $\frac{2}{5}$)

[b] $\frac{1}{2}$ .... $\frac{1}{3}$ (> or = or <)

[c] The quotient of dividing $1.92 \div 0.6 =$ .... (3.5 or 3.1 or 3.2 or 3)

[d] $355 \div 18 = 3.55 \div$ .... (1.8 or 0.18 or 18 or 1800)

[e] $2\frac{1}{4} \times 2\frac{2}{3} =$ .... (3 or $2\frac{1}{4}$ or 6 or 5)

2 *Complete each of the following :*

[a] If : $3 \in \{2, x, 5\}$, then $x =$ ....

[b] If : $5 \in \{3, 4 + x\}$, then $x =$ ....

[c] $(10.555 - 8.245) \div 2.8 =$ ....

[d] $5\frac{5}{8} \simeq$ .... to the nearest two decimal point.

[e] If : $8 \in \{7, 5, 2x\}$, then $x =$ ....

3 *State if each set is finite , infinite or empty :*

[a] The set of whole numbers lying between 3 and 4 ( )

[b] The set of pupils in your school. ( )

[c] The set of even numbers. ( )

[d] The set of prime numbers between 1 and 3 ( )

[e] The set of dinosaurs in the zoo. ( )

4 If : $A = \{2, 5, 6, 7\}$ and $B = \{0, 1, 5, 6\}$ put the suitable sign of ($\in$ or $\notin$)

[a] 6 .... A , 6 .... B

[b] 2 .... A , 2 .... B

[c] 1 .... A , 1 .... B

[d] 5 .... A , 5 .... B

[e] 65 .... A , 65 .... B

5 *Bassem bought a computer for 3000 pounds He paid 500 pounds cash money and divided the remainder into 50 equal monthly installments calculate the value of each installment.*

....

....

....

Equal sets

1 Put (✓) for the true statement and (✗) for the false one :

(a) $\{1 , 2\} = \{2 , 1\}$ ( )

(b) $\{5\} = \{5\}$ ( )

(c) $\{37\} = \{73\}$ ( )

(d) $\{1 , 2 , 5\} = \{21 , 5\}$ ( )

(e) $\{43\} = \{4 , 3\}$ ( )

(f) $\{0 , 2 , 4 , 6\}$ = the set of the even numbers less than 6 ( )

(g) $\{r , a , c\}$ = the set of the letters forming the word "car". ( )

(h) $\{m , a , t , h , s\}$ = {maths} ( )

(i) $\{77 , 99\}$ = the set of digits of 9977 ( )

(j) $\{12\}$ = the set of months of the year. ( )

(k) $\{1 , 2 , 3 , 6\}$ = the factors of the number 6 ( )

---

2 If X = the set of letters forming the word "Lab" ,
Y = the set of letters forming the word "ball" , is X = Y ?

....

---

3 Match the equal sets in the following columns :

$\{6 , 8 , 9\}$	The set of the letters forming the word "ziwel"
$\{10 , 12 , 14 , ... , 98\}$	The set of the digits of 9688
$\{3 , d\}$	{summer , winter , spring , autumn}
$\{z , i , e , w , l\}$	The set of the months in a year that have 35 days.
The set of the seasons of the year	$\{d , 3\}$
$\varnothing$	The set of the even numbers that have 2 digits.

Complete by using suitable symbol of = or ≠ :

a $\{5\}$ .... $\{5\}$

b $\{1, 2\}$ .... $\{2, 1\}$

c $\{43\}$ .... $\{4, 3\}$

d $\{35\}$ .... $\{53\}$

e $\{6, 2, 3\}$ .... $\{26, 3\}$

f $\{t, e, s\}$ .... the set of letters of the word "test".

g {Khaled} .... {k , h , a , l , e , d}

h $\{12\}$ .... the set of months in the year.

i The set of letters of the word "start" .... the set of letters of the word "star".

j $\{1, 2, 3\}$ .... the set of digits of the number 12132

In each of the following , find the value of x :

a $\{x\} = \{3\}$, then $x =$ ....

b $\{1, 4\} = \{x, 1\}$, then $x =$ ....

c $\{2, x, 5\} = \{5, 7, 2\}$, then $x =$ ....

d $\{x + 5\} = \{9\}$, then $x =$ ....

e $\{x, x - 1\} = \{5, 6\}$, then $x =$ ....

f $\{6, x - 1\} = \{6, 3\}$, then $x =$ ....

g $\{2, 4, x + 1\} = \{2, 5, 4\}$, then $x =$ ....

If $\{x, 3, 4, 7\} = \{7, y, 6, 3\}$ then complete :

a $x =$ ....

b $x - y =$ ....

c $x + y =$ ....

d $y =$ ....

e $x \times y =$ ....

f $\frac{x}{y} =$ ....

5 **In each of the following, find the values of a and b that make each sentence true :**

(a) $\{a, 7\} = \{b, 2\}$ a = ... b = ...

(b) $\{5, a, 8\} = \{b, 9, 8\}$ a = ... b = ...

(c) $\{a, 2\} = \{b - 3, 4\}$ a = ... b = ...

Inclusion and subsets

1 **Put the suitable sign ($\subset$ or $\not\subset$) :**

a {1} ………… {1, 3}
b {2, 1} ………… {3, 2, 6}
c {5, 3} ………… {3, 9, 5}
d {7} ………… {7}
e {3} ………… {33}
f {4, 5} ………… {54}
g {3, 2} ………… {2, 3}
h {0, 1} ………… {10, 15}
i {37} ………… {73}
j {43, 42} ………… {40, 42}
k {0} ………… {20}
l {5, 2} ………… ∅
m ∅ ………… {0}
n ∅ ………… {1, 2, 3}
o {9, 2} ………… the set of digits of the number 5992
p {m, a} ………… {maths}
q {sets} ………… {s, e, t}

2 **Put the suitable sign ($\in$, $\notin$, $\subset$ or $\not\subset$) :**

a {2, 3} ………… {1, 2, 3}
b {1, 2} ………… {2, 3, 4}
c b ………… {b, c}
d {b} ………… {b, c}
e {a, b} ………… {b, a}
f 1 ………… {0, 10}
g 5 ………… {55}
h {22} ………… {2}
i {38} ………… {6, 3, 8}
j 32 ………… {32}
k 0 ………… ∅
l {0} ………… ∅
m ∅ ………… {0}
n {3, 5, 6} ………… {3, 5}
o 5 ………… the set of odd numbers.
p {2, 4} ………… the set of even numbers.
q 52 ………… the set of digits of the number 5252
r The set of digits of the number 15 ………… {5, 15}

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3 **In the oppositeVenn diagram :**

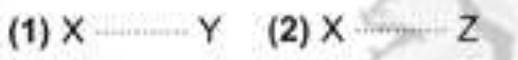
a List the elements of the three sets X, Y and Z

(1) X = {...... , ...} (2) Y = {...... , ... , ...}

(3) Z = {...... , ... , ... , ...}

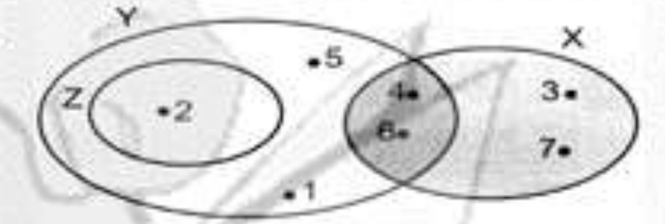
Z Y X •1 5• •7 •3

b Put the suitable sign (⊂ or ⊄) :



(1) X .... Y (2) X .... Z (3) Y .... X (4) Y .... Z

4 **By using the opposite Venn diagram, complete by using the suitable sign ∈, ∉, ⊂ or ⊄ :**

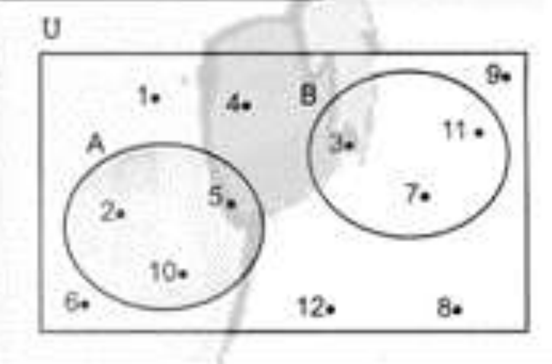


a 3 .... X **b** {1, 4} .... Y

c {1, 6} .... X **d** 5 .... Z

e Z .... Y **f** X .... Y

5 **List :**



a U = {..............................}

b A = {..............................}

c B = {..............................}

d The elements of A that are in B = {..............................}

6 **Write down all the subsets for each of the following sets :**

(a) {8}

....

....

(b) {99}

....

....

(c) {5, 6}

....

....

(d) {3, 5, 9}

....

....

(e) The set of letters of the word "hodhod".

....

....

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Find the number x so that each of these statements is correct :

$\{x\} \subset \{5\}$ x = ...

$\{9,4\} \subset \{x,5,9\}$ x = ...

$\{10,13,12\} \subset \{x,11,12,13\}$ x = ...

$\{x\} \subset \{1,2\}$ x = ...

$\{5,6\} \subset \{x+3,6\}$ x = ...

$\{2\} \not\subset \{5,x\}$ x = ...

$\{x\} \not\subset \{5,6\}$ x = ...

$\{x,3\} \subset \{3,5\}$ x = ...

$\{0\} \subset \{2,x,5\}$ x = ...

$\{5,x\} \subset \{3,5,7,9\}$ x = ...

$\{3,x-1\} \subset \{4,3\}$ x = ...

$\{1,3,7\} \not\subset \{1,3,x\}$ x = ...

If $\{3,x\} \subset \{3,4,5\}$ and

$\{x,7,1\} \subset \{1,5,6,7\}$ so , find x

x = ...

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1 ***Complete each of the following :***

[a] If {5 , 3 , x} = {y , 5 , 1} , then x = ... , y = ...

[b] $3.25 \times 1.6 =$ ....

[c] $9\frac{3}{4} \div 3\frac{1}{4} =$ ....

[d] The number 83.7694 ≃ 83.77 to the nearest ....

[e] 76.52 ÷ .... = 7.652

2 ***Using the opposite venn diagram , complete using (∈ , ∉ , ⊂ or ⊄)***

[a] Y X

[b] 8 X

[c] {10} X

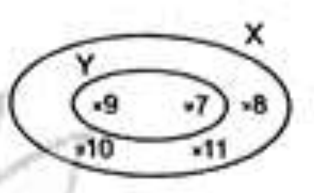
[d] 11 .... Y

[e] ∅ X

[f] {9 , 11} .... Y

[g] Y .... {10 , 11 , 9 , 7}

[h] X .... Y



3 ***The product of two numbers is 8745 if one of them is 165 , then what is the other number ?***

....

4 ***Arrange the following numbers ascendingly :*** $14\frac{1}{4}$, 15.025 , 14.375 and $14\frac{1}{8}$

....

5 ***Write down all the subsets for each of the following sets :***

[a] {7} ....

[b] {3 , 4 , 8}

....

....

Operations on sets

1 The Venn diagram below shows sets X , Y and Z :

List the elements of :

a $X \cap Y =$ .... b $Y \cap Z =$ ....

c $X \cap Z =$ .... d $X \cap Y \cap Z =$ ....

e $X \cup Y =$ .... f $Y \cup Z =$ ....

g $X \cup Z =$ .... h $X \cup Y \cup Z =$ ....

2 The opposite Venn diagram shows sets A , B and C. List the elements of :

a $A \cap B =$ .... b $C \cap A =$ ....

c $B \cap C =$ .... d $A \cap B \cap C =$ ....



e $A \cap B =$ .... f $C \cap A =$ ....

g $B \cap C =$ .... h $A \cap B \cap C =$ ....

3 Find each of the following :

a $\{2, 3, 4\} \cap \{3, 5, 2, 6\} =$ .... b $\{3, 6\} \cap \{6, 3\} =$ ....

c $\{5, 3, 2\} \cap \{0, 2, 3, 5\} =$ .... d $\{\ \} \cap \{0\} =$ ....

e $\{5, 3\} \cap \{2, 4, 5\} =$ .... f $\{2, 5\} \cap \{5, 2\} =$ ....

g $\{a, b, c\} \cap \{d, h, f\} =$ .... h $\{2\} \cap \{22\} =$ ....

i $\{2\} \cap \{3, 2, 6\} =$ .... j $\{35\} \cap \{53\} =$ ....

Find each of the following :

a $\{2, 3\} \cup \{1, 5, 6\} =$ .... b $\{3, 1\} \cup \{3, 5\} =$ ....

c $\{a, b, c\} \cup \{a, b, h\} =$ .... d $\varnothing \cup \{2, 4\} =$ ....

e $\{5\} \cup \{1, 5, 7\} =$ .... f $\{2, 4\} \cup \{4, 2\} =$ ....

g $\{3\} \cup \{3\} =$ .... h $\{5\} \cup \{55\} =$ ....

i $\{0\} \cup \{20\} =$ .... j $\{0\} \cup \varnothing =$ ....

k $\{5, 3\} \cup \{35\} =$ .... l [illegible] $\{5, [illegible]\} \cup \{45, 1\} =$ ....

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4 Represent the two sets A and B by a Venn diagram , then find $A \cap B$:

a $A = \{4, 6, 8\}$ and $B = \{3, 5, 7\}$

$A \cap B = \{$ .... $\}$
$A \cup B = \{$ .... $\}$

b $A = \{c, d, e, f\}$ and $B = \{d, e, l\}$

$A \cap B = \{$ .... $\}$
$A \cup B = \{$ .... $\}$

c $A = \{1, 2, 3, 4\}$ and $B = \{2, 3\}$

$A \cap B = \{$ .... $\}$
$A \cup B = \{$ .... $\}$

d $A = \{l, u\}$ and
B = {the set of letters of the word "Laila"}

$A \cap B = \{$ .... $\}$
$A \cup B = \{$ .... $\}$

5 Complete the following using $\in$, $\notin$, $\subset$ or $\not\subset$:

a 3 .... $\{3, 4, 5\} \cap \{2, 3, 4\}$
b $\{3, 4\}$ .... $\{3, 4, 7\} \cup \{5, 4, 3\}$
c $\{2\}$ .... $\{5, 2, 3\} \cap \{1, 2, 5\}$
d $\{6\}$ .... $\{5\} \cup \{6\}$
e 15 .... $\{5\} \cup \{1\}$
f $\{13\}$ .... $\{13\} \cap \{3\}$
g 2 .... $\{2, 3\} \cup \{3, 4\}$
h $\{36\}$ .... $\{6, 16, 36\} \cup \{6, 36\}$
i 8 .... $\{\ \} \cap \{8\}$
j $\{2, 5, 6\} \cap \{3, 5\}$ .... $\{2, 5\}$
k $\{5, 6, 1\} \cap \{5, 16\}$ .... $\{5\}$
l $\{2, 3\} \cup \{32\}$ .... $\{2, 3, 32\}$

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6 If $A = \{1, 3, 5, 7\}$, $B = \{3, 7, 9, 11\}$ and $C = \{1, 2, 5, 11\}$, list the sets :

- **a** $A \cap B =$ ....
- **d** $A \cup B =$ ....
- **b** $B \cap C =$ ....
- **e** $B \cup C =$ ....
- **c** $C \cap A =$ ....
- **f** $C \cup A =$ ....

7 Choose the correct answer :

- **a** If $x \in \{2, 5\} \cap \{5, 7, 8\}$, then $x =$ .... (2 *or* 5 *or* 7 *or* 8)
- **b** If $\{4, 3\} \cap \{x, 1, 2\} = \{3\}$, then $x =$ .... (1 *or* 2 *or* 3 *or* 4)
- **c** If $\{2\} \cap \{x\} = \{2\}$, then $x =$ .... (22 *or* 2 *or* zero *or* $\varnothing$)
- **d** If $\{15, x\} \cap \{5, 1\} = \{5\}$, then $x =$ .... (15 *or* 5 *or* 1 *or* zero)
- **e** If $\{5, 3\} \cap \{3, 9\} = \{x\}$, then $x =$ .... (9 *or* 35 *or* 5 *or* 3)
- **f** If $\{1, 5, 6\} \cap \{5, x, 3\} = \{5, 6\}$, then $x =$ .... (1 *or* 3 *or* 5 *or* 6)

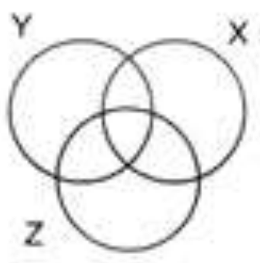
8 In each of the following, find x such that each of the following statements is correct :

- **a** $\{5\} \cup \{x\} = \{5, 3\}$
- **b** $\{2, 3\} \cup \{2, x\} = \{2, 3, 5\}$
- **c** $\{1, 5\} \cup \{2, x\} = \{1, 2, 5, 6\}$
- **d** $\{2, 3\} \cup \{1, 5\} = \{1, 2, 3, x\}$
- **e** $\{3, 4\} \cup \{2, x\} = \{2, 3, 4\}$
- **f** $\{4, 7\} \cup \{1, 5, x\} = \{1, 4, 5, x\}$

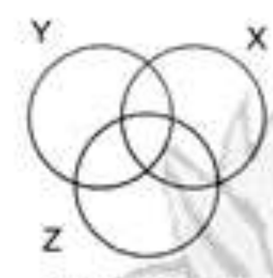
9 Complete each of the following :

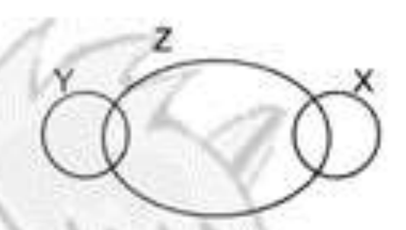
- **a** If $a \in X$ or $a \in Y$, then $a \in$ ....
- **b** If $a \in X$ and $a \in Y$, then $a \in$ ....
- **c** If $X \subset Y$, then $X \cap Y =$ .... and $X \cup Y =$ ....
- **d** If $X \cup Y = Y$, then ....
- **e** If $X \cap Y = \varnothing$, then two sets X and Y are ....
- **f** If $X \cup Y = \varnothing$, then the two sets X and Y are ....

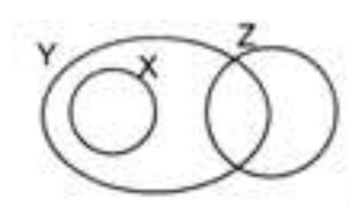
In each of the following , shade the part representing the given set :





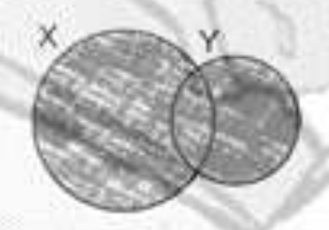


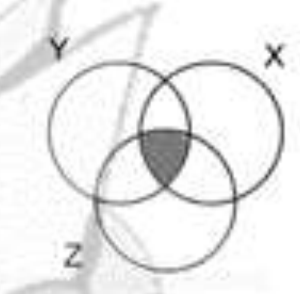




Use the two symbols ∪ and ∩ or both to represent the shaded part in each of the following :

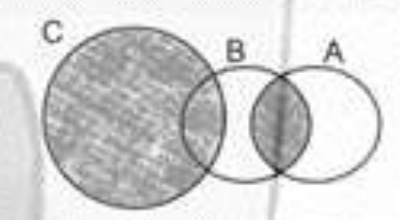


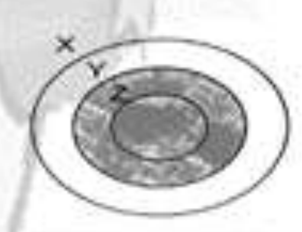




....

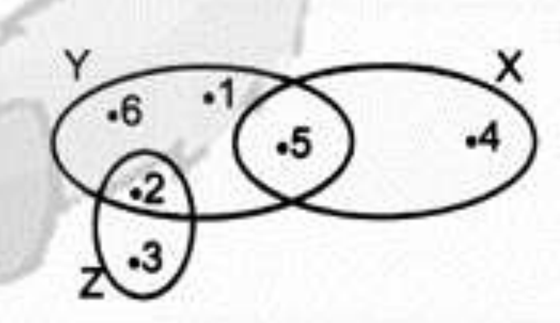






....

By using the opposite Venn diagram , find :



a X ∪ Y = ...

b X ∩ Y = ...

c X ∪ Z = ...

d X ∩ Z = ...

e Y ∪ Z = ...

f Y ∩ Z = ...

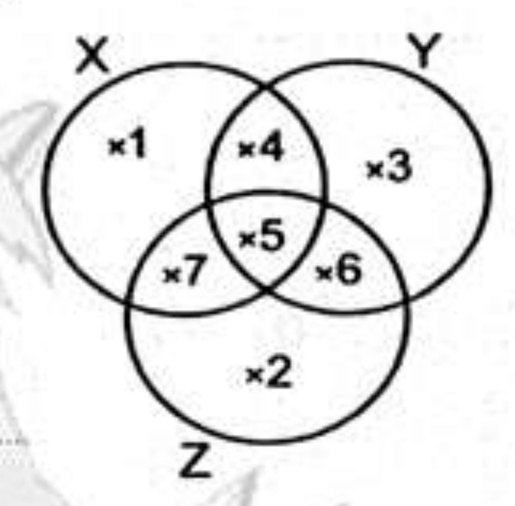
g X ∪ Y ∪ Z = ...

h X ∩ Y ∩ Z = ...

i {2 , 5} ∪ Z = ...



1 ***Using the opposite venn diagram , complete :***



[a] X = ...

[b] Y = ...

[c] Z = ...

[d] $X \cap Y$ = ...

[e] $X \cup Z$ = ...

[f] $Z \cup Y$ = ...

[g] $X \cup Y \cup Z$ = ...

[h] $X \cap Y \cap Z$ = ...

2 ***Choose the correct answer :***

[a] {1 , 9} .... {1 , 2 , 3 , ... , 11} ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

[b] 62.5 ÷ 2.5 = ... (25 *or* 35 *or* 700 *or* 45)

[c] 20.379 ≃ .... (to the nearest hundredth)

(20 *or* 20.37 *or* 20.4 *or* 20.38)

[d] $\varnothing$ .... {0} (= *or* $\subset$ *or* $\not\subset$ *or* $\in$)

[e] If : $X \subset Y$, then $X \cap Y$ = ... (X *or* Y *or* $\varnothing$ *or* {0})

3 ***If the price of one kg. of apples is 9.75 pounds. find the price of 2.5 kg.***

....

4 ***Complete each of the following :***

[a] $X \cap X$ = ... [b] $X \cup X$ = ...

[c] $X \cup \varnothing$ = ... [d] $X \cap \varnothing$ = ...

[e] .... ÷ 9 = 4.5

[f] $3\frac{1}{2} \times 4\frac{2}{3}$ = ...

5 ***Arrange in a descending order :*** 8 , $11\frac{4}{5}$, $12\frac{3}{7}$, 11.7 , 12.4

....

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Exercise 7 & 8

Operations on sets

1 Using the opposite Venn diagram , complete :

U
A 1 7 5 8 2 9 4 3 B 6

U = { .... }

B = { .... } A = { .... }

B' = { .... } A' = { .... }

$(A \cup B)'$ = { .... } $(A \cap B)'$ = { .... }

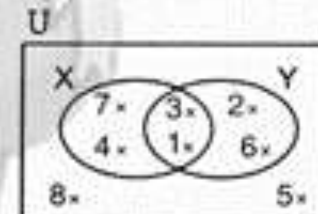
A − B = { .... } B − A = { .... }

U − B = { .... } U − A = { .... }

U − B' = { .... } U − A' = { .... }

$(A - B)'$ = { .... } $(A - B)'$ = { .... }

2 Study the opposite Venn diagram , then complete :



U = { .... }

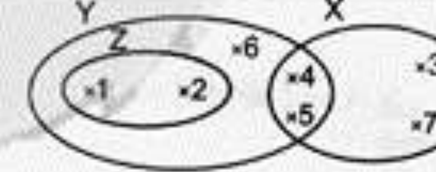
X = { .... } Y = { .... }

X' = { .... } Y' = { .... }

$X' \cup Y'$ = { .... } $X' \cap Y'$ = { .... }

$(X \cup Y)'$ = { .... } $(X \cap Y)'$ = { .... }

3 Using the opposite figure , complete :



X − Y = ...

Y − X = ...



X − Z = ... Z − X = ...

Y − Z = ... Z − Y = ...

X ∪ Y = ... X ∩ Y = ...

X ∪ Z = ... X ∩ Z = ...

Z ∪ Y = ... Z ( ) Y = ...

4 Find the following :

a $\{7, 8\} - \{8, 7\}$ = ...

b $\{a, b, c, d\} - \{a, b, c, o\}$ = ...

c $\{2, 5\} - \{3, 4\}$ = ...

d $\{2, 5, 7\} - \{8, 10, 2, 7, 5\}$ = ...

e $\{9\} - \{11, 9\}$ = ...

f $\varnothing - \{1, 2, 3\}$ = ...

g $\{5, 6\} - \varnothing$ = ...

h $\{33\} - \{3\}$ = ...

i $\{\ \ \} - \{0\}$ = ...

5 If $U = \{a, b, c, d, h, o, r, m\}$, $X = \{b, c, h, d\}$ and Y = the set of letters in the word "cab", represent the three sets by a Venn diagram, then find :

a X' = ...

b Y' = ...

c $X - Y$ = ...

d $Y - X$ = ...

e $X \cap Y$ = ...

f $X \cup Y$ = ...

g $(X \cap Y)'$ = ...

h $(X \cup Y)'$ = ...

6 Let U be the universal set. Suppose that X and Y are two subsets of U Complete each of the following :

a $X \cup X'$ = ... $X \cap X'$ = ... , $(X')'$ = ... U' = ... , $\varnothing'$ = ...

b $X' \cup U$ = ... , $X' \cap U$ = ... , $X' \cup \varnothing$ = ... , $X' \cap \varnothing$ = ...

c $\varnothing - X$ = ... and $X - \varnothing$ = ... $X - U$ = ... and $U - X$ = ...

d If $X \cap Y = \varnothing$, then $X - Y$ = ... and $Y - X$ = ... , $Y - Y$ = ...

e If $Y \subset X$, then $X \cap Y$ = ... , $X \cup Y$ = ... and $Y - X$ = ...

f If $X = Y$, then $X \cap Y$ = ... , $X \cup Y$ = ... , $X - Y$ = ... and $Y - X$ = ...

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7 **Find the value of x in each of the following :**

a $x \in \{2, 3\} - \{3, 4\}$ x = ...

b $\{5, 6\} - \{x\} = \{6\}$ x = ...

c $\{6, 7, 8\} - \{6\} = \{7, x\}$ x = ...

d $\{2, 3\} - \{3, x\} = \varnothing$ x = ...

e $\{8, 9, 12\} - \{9, x\} = \{8\}$ x = ...

f $\{5, 3, 4\} - \{3, 5\} = \{x + 1\}$ x = ...

g $\{10, 12, 15\} - \{12\} = \{10, 3x\}$ x = ...

8 **Use the opposite figure to find , using the listing method , each of the following :**

a $X - Y$ = ... $Y - X$ = ...

b $X - Z$ = ... $Z - X$ = ...

c $Y - Z$ = ... $Z - Y$ = ...

d $X \cap Y$ = ... $X \cap Z$ = ...

e $Y \cap Z$ = ... $Y \cup Z$ = ...

f $X \cup Y$ = ... $X \cup Z$ = ...

g Z' = ... X' = ...

h Y' = ... $X \cap Y \cap Z$ = ...

i $X \cup Y \cup Z$ = ...

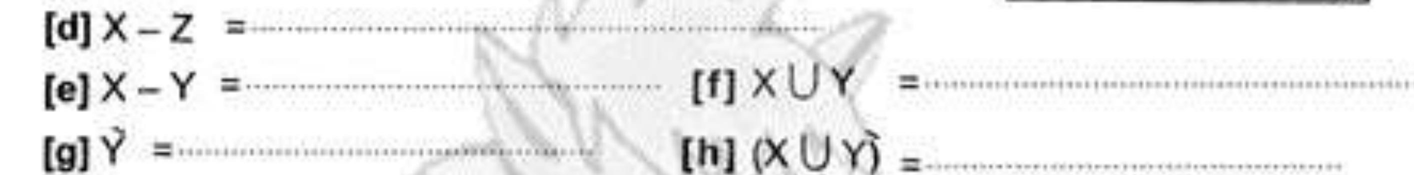
1 ***Using the opposite Venn diagram , find :***

[a] $X \cap Z$ = ...

[b] $Z \cap Y$ = ...

[c] $X \cap Y$ = ...

[d] $X - Z$ = ...



[e] $X - Y$ = ... [f] $X \cup Y$ = ...

[g] $\acute{Y}$ = ... [h] $(X \cup Y)\acute{}$ = ...

---

2 ***Complete the following :***

[a] $\{2 , 3\} \cup \{3 , 4\}$ = ...

[b] If : $\{3 , 5\} \subset \{3 , 10 , x\}$, then x = ...

[c] If : $X \subset Y$, then $X - Y$ = ...

[d] $\frac{3}{10} + 5$ = ...

[e] $913.75 \times 10 = 91.375 \times$ ....

---

3 ***Choose the correct answer :***

[a] $\varnothing$ .... $\{3 , 5\}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[b] If : $x \in \{4 , 5\} - \{1 , 4 , 7\}$, then x = ... (1 or 4 or 5 or 7)

[c] 45 days (to the nearest week) $\simeq$ .... (5 or 6 or 7 or 8)

[d] The greatest number in the following is ....

(0.111 or 0.12 or 0.123 or 1.023)

[e] The number of subsets of the set $\{4 , 5\}$ = ... (2 or 3 or 4 or 5)

---

4 ***Find the area and the perimeter of the rectangle if its dimensions are 3.5 cm. and 5.3 cm.* , then approximate the result to the nearest unit.**

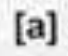


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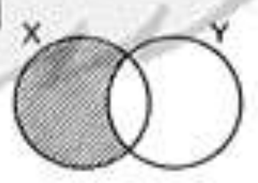
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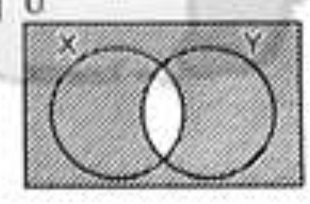
5 ***Write the set represented by the shaded part in each of the following :***

[a]



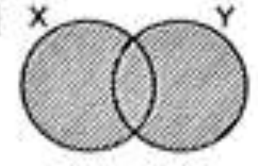
....

[b]



....

[c]



....

General exercise on unit two

Completion questions

1 Complete by putting the suitable symbol ($\in$, $\notin$, $\subset$ or $\not\subset$) :

(a) 8 .... {7 , 5 , 8 , 88}
(b) {8} .... {7 , 5 , 8 , 88}
(c) $\varnothing$ .... {2 , 4}
(d) {8 , 4} .... {4 , 5 , 6 , 8}
(e) 7 .... {3 , 5 , 9}
(f) {9} .... {99}
(g) {1} .... {1 , 11 , 111}
(h) {1 , 2} .... {21 , 12}

2 Complete :

(a) $\{3 , 4\} \cap \{2 , 4\}$ = ...
(b) $\{3 , 4\} \cap \{43\}$ = ...
(c) $\{2 , 3 , 5\} \cap \{3 , 5 , 2\}$ = ...
(d) $\{3 , 5\} \cup \{4 , 6\}$ = ...
(e) $\{2 , 4 , 7\} \cup \{1 , 4 , 7\}$ = ...
(f) $\{a , b , c\} \cup \{b , c , a\}$ = ...

3 If X and Y are two non-empty sets , then :

(a) $X \cap \varnothing$ = ...
(b) $X \cap X$ = ...
(c) If $X \subset Y$, then : $X \cap Y$ = ...
(d) If $X \cap Y = Y$, then : .... $\subset$ ....

4 Complete by putting the suitable symbol ($\in$, $\notin$, $\subset$ or $\not\subset$) :
If $Y = \{2 , 4 , 6\} \cup \{1 , 2 , 3\}$, then :

(a) {6} .... Y
(b) {1 , 2 , 3 , 6} .... Y
(c) 6 .... Y

5 If $A = \{5 , 6 , 7\} - \{2 , 4\}$, then :

(a) 4 .... A
(b) {5 , 6} .... A
(c) {7} .... A
(d) 7 .... A
(e) {2} .... A

6 If $X = \{2 , 4 , 5\} \cap \{5 , 3 , 7\}$, then : 1 X

7 {1 , 8} .... {0 , 1 , 2 , 3 , 4 , 5 , ...}

8 If $X \subset Y$, then : $X - Y$ = ...

9 If X .... Y , then : $X \cap Y = X$

10 If X and Y .... U , then : $X \cup Y = Y \cup X$

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11 $\{5\}$ .... $\{2, 5\}$

12 3 .... $\{30, 23\}$

13 12 .... $\{0, 2, 4, 6, ...\}$

14 Zero .... $\{ \}$

15 3 .... the set of factors of the number 18

Multiple - choice questions :

Choose the correct answer from those given :

1 $\{34\}$ .... $\{4, 3\}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 $\varnothing$ .... $\{ \}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

3 The number of subsets of the set $\{4, 5\}$ equals ....

(2 or 3 or 4 or 5)

4 $\{2, 3, 6, 12\} \cap$ the set of factors of the number 6 is ....

($\{2, 3, 6, 12\}$ or $\{3, 6\}$ or $\{4, 6\}$ or $\{2, 6, 3\}$)

5 If $X \subset Y$, then : $X \cap Y =$ .... (X or Y or $\varnothing$ or U)

6 If U is the set of odd numbers less than 25, then $\{5, 15, 25\}$ .... U

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

7 If $\{3, 6\} = \{1 + x, 3\}$, then : $x =$ .... (2 or 3 or 4 or 5)

8 If $\{2, a + 2\} \not\subset \{2, 4, 6, 8\}$, then : a = ... (2 or 4 or 6 or 8)

9 5 .... $\{3, 5\} \cap \{4, 7\}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

10 If $X \subset Y$, then : $X - Y =$ .... (X or Y or $\varnothing$ or U)

11 If $X \cap Y = Y$, then : X .... Y ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

12 If $\{7, 10\} \subset \{10, x + 4\}$, then : $x =$ .... (3 or 4 or 5 or 6)

13 If $U = \{2, 3, 4, 5, 6, 7\}$, then :

$\varnothing$ .... U ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

U .... U ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

$\{6, 7\}$ .... U ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

Third Essay questions :

1 Represent the two sets A and B by Venn diagram in each of the following cases , then find $A \cap B$:

(a) $A = \{2, 3, 7\}$, $B = \{1, 4, 8\}$

$A \cap B$ = ______________

(b) $A = \{1, 2, 3, 6\}$, $B = \{2, 3\}$

$A \cap B$ = ______________

(c) $A = \{4, 7, 6, 5, 1\}$, $B = \{2, 3, 4, 5, 6\}$

$A \cap B$ = ______________

2 Represent the two sets A and B by Venn diagram in each of the following cases , then find $A \cup B$:

(a) $A = \{3, 6, 9\}$, $B = \{2, 5, 8\}$

$A \cup B$ = ______________

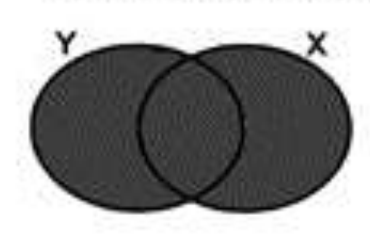
(b) $A = \{1, 4, 8, 9\}$, $B = \{4, 7, 9\}$

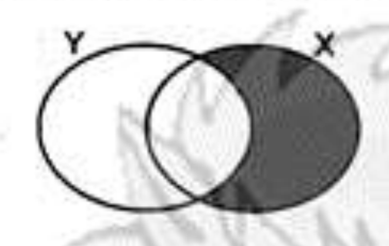
$A \cup B$ = ______________

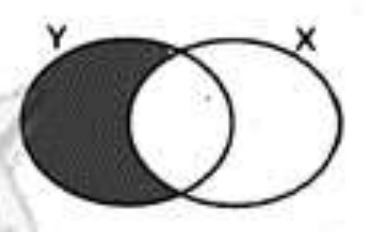
(c) $A = \{a, m, x\}$, $B = \{a, f, x, m\}$

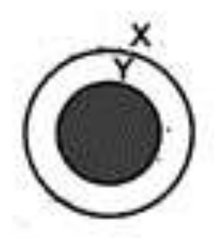
$A \cup B$ = ______________

③ Using the operations of intersection and union , the difference and complement , express the shaded part in each of the following diagrams :

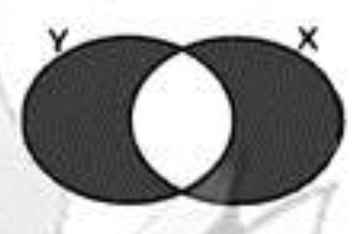


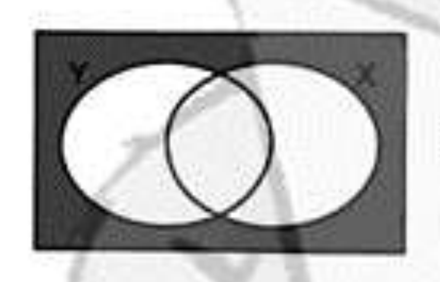


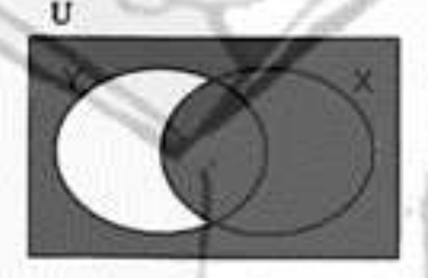












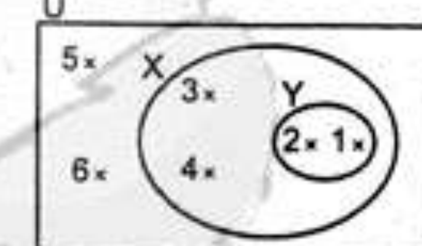
④ Use the opposite Venn diagram to write the following sets :

$X \cap Y$ = ... $X - Y$ = ...

$X \cup Y$ = ...

$(X \cap Y)^`$ = ...

$(X \cup Y)^`$ = ...

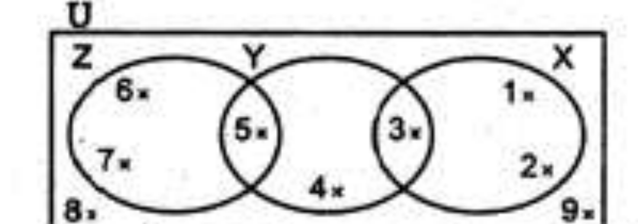


Use the opposite diagram to write the following sets :

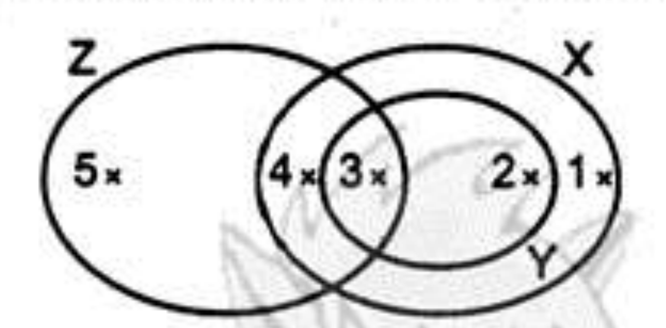
$X \cap Y$ = ... $X - Y$ = ...

$X \cup Y$ = ...

$(X \cup Y)^`$ = ...



Use the opposite Venn diagram to write the following sets :



X = ____________________

Y = ____________________

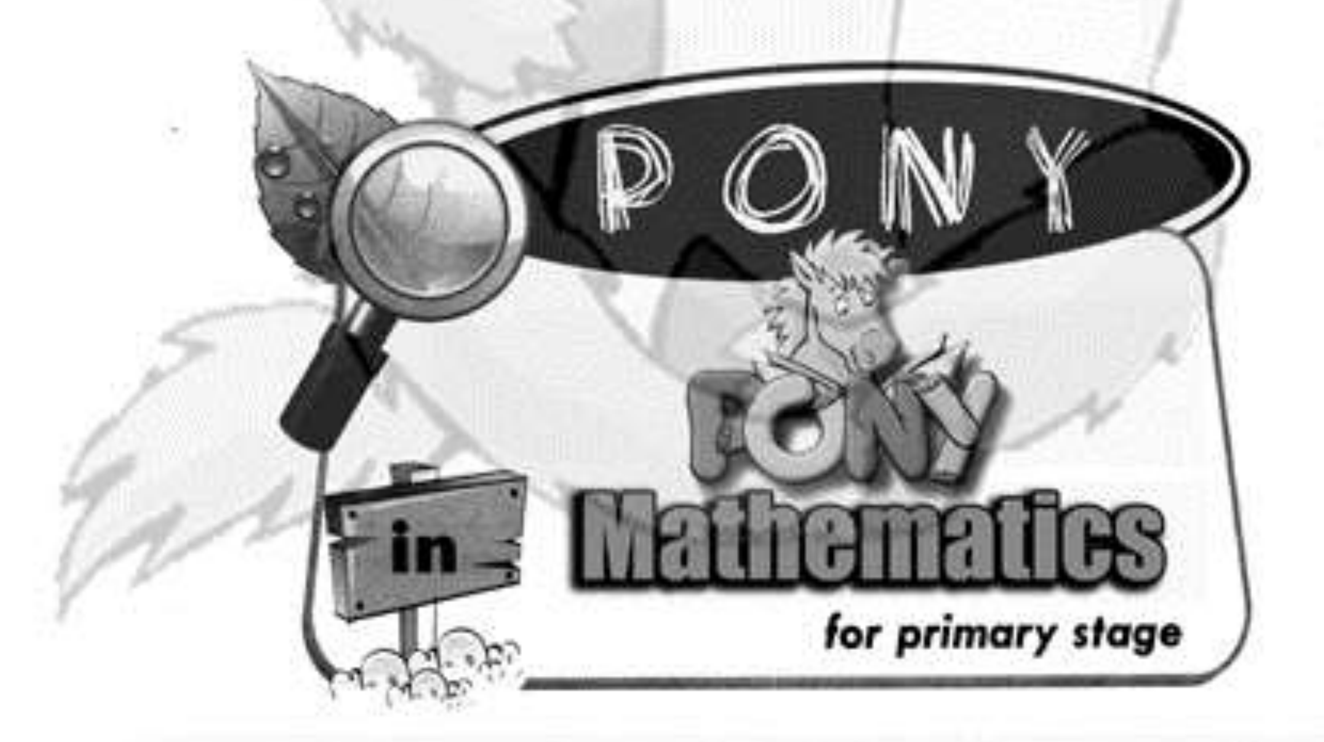
Z = ____________________

X – (Z`)` = ____________________

(X – Z) ∩ (Z – Y) = ____________________

Y – X , Z – Y = ____________________

(Y – X) ∪ (Z – Y) = ____________________



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Unit 3

GEOMETRY

Lesson One	The Circle .
Lesson Two:	Drawing a triangle given the lengths of its three sides .
Lesson Three:	Drawing line segements from the vertices of a triangle perpendicular to its opposite sides .

The Circle

1 Complete :

(a) .... is used in drawing the circle

(b) The lengths of all radii in the same circle are ....

(c) All the diameters of a circle are .... in length.

(d) The chord of a circle is a line segment that connects ....

(e) The diameter is a chord that crosses ....

(f) The longest chord in a circle is called ....

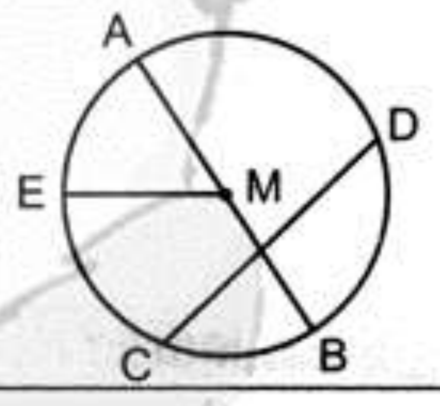
(g) The midpoint of any diameter in a circle is .... of the circle.

(h) The diameter length = 2 × the length ....

(i) If the radius length of a circle is 5 cm. , then the length of the longest chord is .... cm.

(j) To draw a circle whose diameter length is 7.2 cm. , set the compasses to a length equal to .... cm.

2 In the opposite figure , complete :



a $\overline{AB}$ is called the .... of the circle.

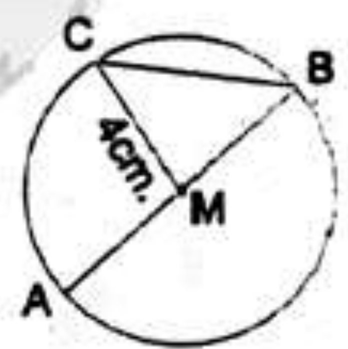
b $\overline{CD}$ is called the .... of the circle.

c $\overline{EM}$ is the .... of the circle.

d If the length of the diameter is 8 cm. , then the length of the radius equals .... cm.

e M is called the .... of the circle.

3 In the opposite figure , complete :



(a) .... is called the longest chord.

(b) .... is called a chord.

(c) .... is called a radius.

(d) AB = ... cm.

(e) MB = ... cm.

(f) MA = $\frac{1}{2}$ × ....

4 **In the opposite figure, complete :**

a) $\overline{AB}$ is a .... in the circle.

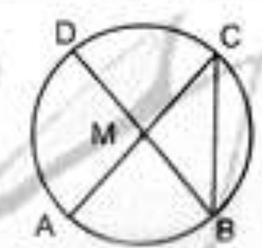
b) $\overline{BC}$ is a .... in the circle.

c) The point .... is the centre of the circle.

d) $\overline{AD}$ is a .... in the circle.

e) The line segments .... , ... and .... are radii in the circle.

5 **In the opposite figure, mention the following :**



a) Two diameters. .... , ...

b) Three radii. .... , ... , ...

c) One chord. ....

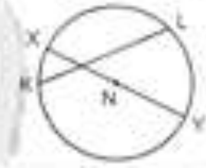
6 **Choose the correct answer between brackets :**

a) Any chord passing through the centre of the circle is called .... (radius *or* diameter *or* centre)

b) Any line segment joining between two points on the circle is called .... (diameter *or* radius *or* chord)

c) The length of the radius = ... the length of the diameter in the same circle. (double *or* half *or* triple)

d) In the opposite figure :



.... is the diameter of the circle N ($\overline{XY}$ *or* $\overline{KL}$ *or* $\overline{NY}$)

e) A circle, the length of its radius is 8 cm., then the length of the greatest chord in it = ... cm. (4 *or* 16 *or* 12)

f) All radii of a circle are .... in length. (different *or* unequal *or* equal)

g) We can draw .... of diameters in a circle. (2 *or* 20 *or* an infinite number)

7 **Complete the table :**

Radius	3 cm.	5 cm.	....	....	18 cm.	....	1.8 cm.	....
Diameter	....	....	16 cm.	22 cm.	....	6.8 cm.	....	9.4 cm.

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8 Draw:

a A circle M with radius length 3 cm.

b A circle L with radius length 4 cm.

c A circle O with diameter length 10 cm.

d A circle H with diameter length 9 cm.

9 Draw a circle M with diameter $\overline{AB}$ of length 10 cm. and the chord $\overline{BC}$ of length 5 cm. What is the type of triangle ABC and triangle MBC ?



10 Draw a circle of centre M with radius length 4 cm. , draw the two radii $\overline{MY}$ and $\overline{MX}$ with an angle of measure 60° , draw $\overline{XY}$ Measure the length of $\overline{XY}$

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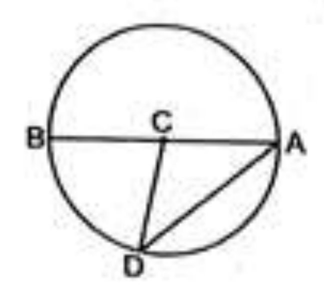
11 Draw a circle with radius length 4.5 cm., draw the chord $\overline{AB}$ of length 6 cm. and draw an angle BAC of measure 90° to meet the circle at C
Measure the length of $\overline{AC}$



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1 *In the opposite figure , complete :*



[a] $\overline{AB}$ is a ········ in the circle.

[b] $\overline{AD}$ is a ········ in the circle.

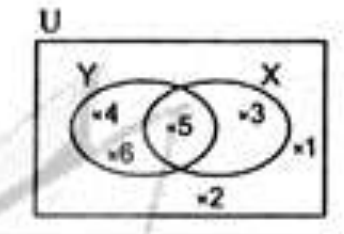
[c] The point ········ is the centre of the circle.

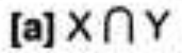
[d] The line segments ········ , ········ and ········ are radii in the circle.

[e] The triangle ACD is ········ triangle according to its side lengths.

---

2 *Use the opposite Venn diagram to list :*





[a] $X \cap Y$

[b] $X \cup Y$

[c] $X - Y$

[d] $\grave{Y}$

---

3 [a] Draw a circle M and radius 3 cm.

[b] Draw a circle N with diameter 5 cm.

---

4 *Find the result :*

[a] $2\frac{4}{5} \div 1\frac{3}{4}$ ····································

[b] 89 614 ÷ 518 ····································

[c] 69.5×0.47 ····································

---

5 Draw the circle of centre M with radius length 5 cm. , draw the diameter $\overline{AB}$, then draw the chord $\overline{BC}$ with length 6 cm. , then draw $\overline{AC}$ what is the type of the triangle ABC according to the measures of its angles ?

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Constructing a triangle

1 Draw the triangle ABC in which AB = 4 cm. , BC = 3 cm. and AC = 5 cm. , what is the type of this triangle according to its angles ?

2 Draw the triangle XYZ in which XY = 10 cm. , YZ = 8 cm. and XZ = 6 cm. , then find the measure of the angle XZY , what do you notice?

3 Draw the triangle LMN in which LM = 7 cm. and MN = NL = 6 cm. , then find the measure of each ∠ L and ∠ M ,

4 Draw the triangle XYZ in which XY = YZ = ZX = 6 cm.
What do you notice ?

---

5 Draw the triangle ABC where AB = AC = 5 cm. and BC = 6 cm. in which D is the midpoint of $\overline{BC}$, then draw $\overline{AD}$ and then find the measure of (∠ADB) and find the length of the line segment $\overline{AD}$

---

6 Draw a circle whose diameter is 8 cm. long and its centre is O
$\overline{AB}$ is a diameter of this circle. Draw the triangle DAB where DA = BD = 8 cm. ,
$\overline{DA}$ and $\overline{DB}$ cut the circle in X and Y respectively.

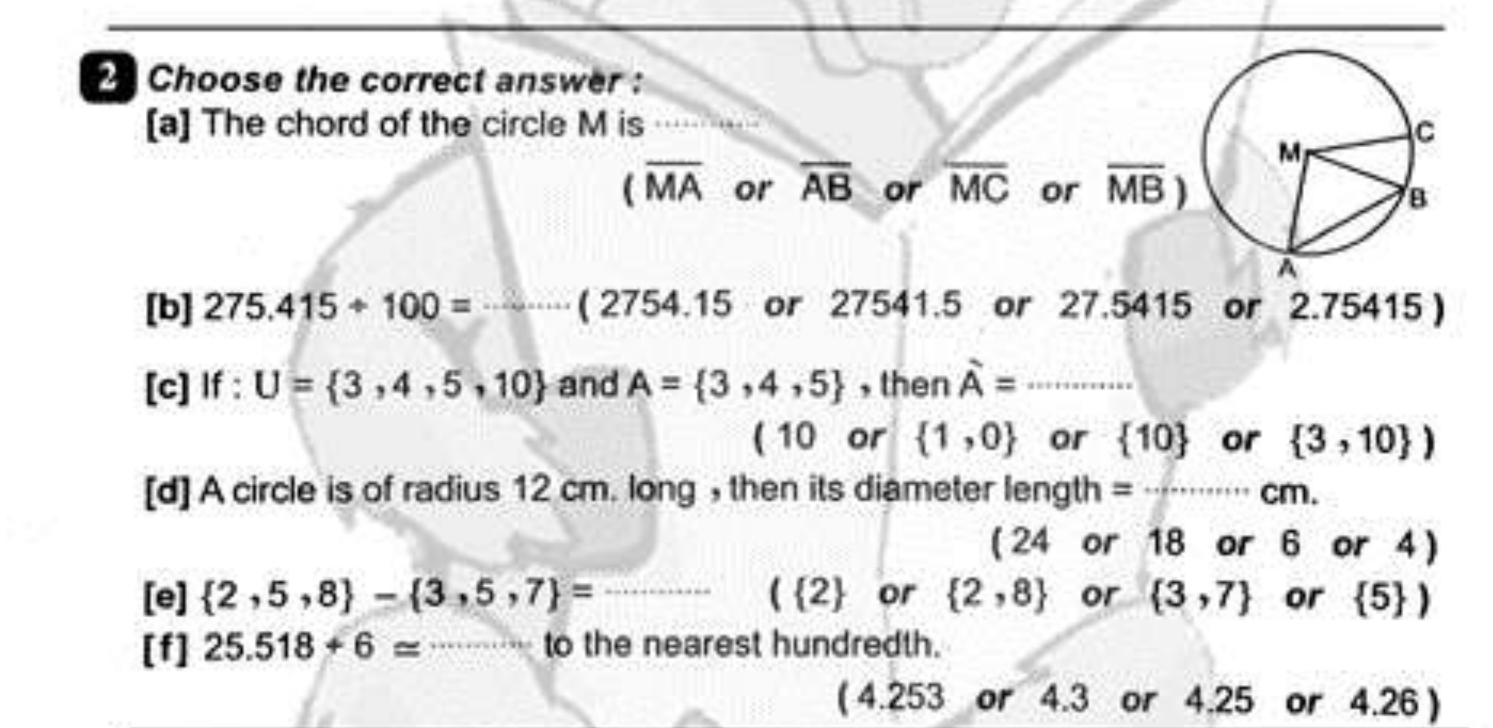
1 ***Draw :***

[a] The triangle ABC , in which : AB = 7cm. , BC = 5 cm. , AC = 6 cm.

[b] The equilateral triangle XYZ whose side length is 5 cm. , then measure each of its interior angles. What do you notice ?

---

2 ***Choose the correct answer :***



[a] The chord of the circle M is ....

($\overline{MA}$ *or* $\overline{AB}$ *or* $\overline{MC}$ *or* $\overline{MB}$)

[b] 275.415 ÷ 100 = ... (2754.15 *or* 27541.5 *or* 27.5415 *or* 2.75415)

[c] If : U = {3 , 4 , 5 , 10} and A = {3 , 4 , 5} , then $\grave{A}$ = ...

(10 *or* {1 , 0} *or* {10} *or* {3 , 10})

[d] A circle is of radius 12 cm. long , then its diameter length = ... cm.

(24 *or* 18 *or* 6 *or* 4)

[e] {2 , 5 , 8} – {3 , 5 , 7} = ... ({2} *or* {2 , 8} *or* {3 , 7} *or* {5})

[f] 25.518 ÷ 6 ≃ .... to the nearest hundredth.

(4.253 *or* 4.3 *or* 4.25 *or* 4.26)

---

3 ***Find the result :***

[a] 12.7 + 8.732 = ... (to the nearest $\frac{1}{100}$)

[b] 3.7 × 0.35 = ...

[c] $4\frac{1}{8} \div 2\frac{1}{16}$ = ...

4

Draw Δ ABC where AC = BC = 7cm. , AB = 4 cm. , then draw a circle of centre B and its radius length = 4 cm. from the drawing complete :

(1) The point A lies .... the circle. **(2)** The point C lies .... the circle.

(3) $\overline{AB}$ is called a .... in the circle.

Drawing line segments from the vertices of a triangle perpendicular to its opposite sides

Draw the triangle ABC in which AB = AC = 8 cm. and BC = 6 cm.

Draw its three altitudes then find the length of each one of them (the heights).

What do you notice ?

Draw the triangle XYZ such that XY = YZ = ZX = 7 cm. Where do the altitudes meet ?

Draw the triangle ABC in which AB = 6 cm. , AC = 9 cm. and m (∠ BAC) = 90°
From point A , draw the altitude $\overline{AD}$ of the triangle ABC , then find the length of $\overline{AD}$ (the height).

Draw the triangle ABC in which AB = 10 cm. AC = 8 cm. and BC = 6 cm.
Draw its three altitudes then find the length of each one of them (the heights).
What do you notice ?

Draw the triangle LMN in which LM = 8 cm. and LN = MN = 5 cm. , using your geometric instruments , draw the three altitudes $\overline{LX}$, $\overline{MY}$ and $\overline{NZ}$, and find the length of each one of them.

Draw the triangle XYZ in which XY = 6 cm. , YZ = 8 cm. and m (∠ Y) = 120°
Draw the three perpendicular line segments , then measure their lengths (the heights).

Draw the triangle ABC in which AB = 6 cm. , BC = 6 cm. and the measure of ∠ B = 120° , draw the three altitudes , then determine the corresponding base to each altitude.

1 ***Complete each of the following :***

[a] $3.25 \times$ .... $= 325$

[b] If : $X \subset Y$, then $X \cup Y =$ ....

[c] 4.48 dm. ≃ .... to the nearest cm.

[d] $\{2, 5, 7\} \cap \{5, 6\} =$ ....

[e] The number of altitudes of right-angled triangle = ...

---

2 ***Choose the correct answer :***

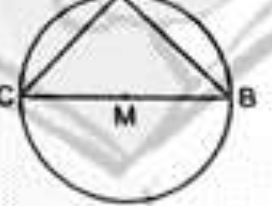
[a] If : $5 \in \{2, 3, X\}$, then $X =$ .... (20 or 3 or 4 or 5)

[b] $612.8 \div 100$ .... 6.128×10 (= or < or >)

[c] $\varnothing$ .... $\{2, 7\}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[d] **In the opposite figure :**

The greatest chord in the circle M is ....



($\overline{AB}$ or $\overline{AC}$ or $\overline{MB}$ or $\overline{CB}$)

[e] $\{5\} - \{1, 3, 4\} =$ .... ($\{5\}$ or $\{1, 3, 4\}$ or $\varnothing$ or $\{4\}$)

---

3 ***Find the resu***

[a] $1\frac{1}{5} \times 1\frac{1}{3}$

[b] $2\frac{1}{5} + 3.3$

[c] $(24.6 + 1.24) \times 3$

[d] $22.5 \div 1.5$


4 If : $X = \{2, 3, 5\}$, write all subsets of set X

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5 [a] Draw the equilateral triangle ABC of side length 6 cm. , then draw its altitudes $\overline{AD}$, $\overline{BE}$ and $\overline{CF}$ measure the length of each altitude. What do you notice ?



[b] Draw Δ ABC in which AB = BC = 5 cm. and AC = 6 cm. , then draw its altitude from B to $\overline{AC}$, then measure its length.

General exercise on unit three

First Completion questions

1 Complete the following :

(a) Any chord which passes through the centre of the circle is called .... in it.

(b) Any line segment which joins two points on the circle is called ....

(c) The diameter length of the circle of radius 1 cm. equals .... cm.

(d) A circle is of diameter length 8 cm. , then its radius length = ... cm.

(e) The number of altitudes of the obtuse-angled triangle is ....

(f) The triangle in which there are two equal sides in length is called ....

(g) The triangle in which the lengths of its sides are equal is called ....

(h) The triangle whose measures of angles are 20°, 50° and 110° is called ....

(i) The triangle in which the measures of its angles are 50° , 90° and 40° is called ....

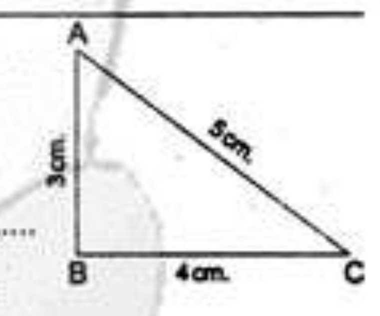
(j) If the lengths of sides of Δ ABC are 6 , 6 , 6 length unit, then it is called .... triangle and the measure of each of its angles are ....°

(k) The kinds (types) of the triangle due to its angles are ....

(l) It is possible to draw a triangle if the lengths of .... are known.

---

2 In the opposite figure , complete :



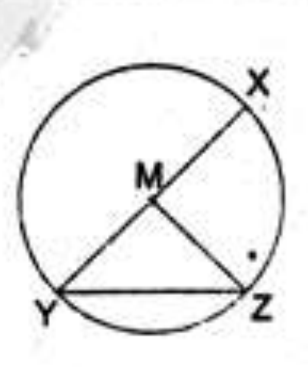
(a) m (∠ ABC) = ...°

(b) The perimeter of Δ ABC = ... cm.

(c) The number of altitudes of triangle ABC = ...

---

3 In the opposite figure , complete :



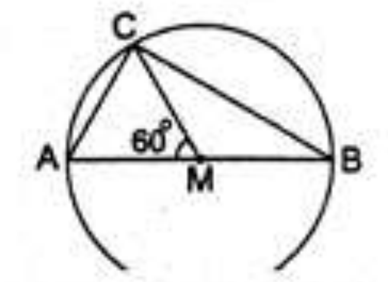
(a) .... is called a diameter in the circle whose centre is M

(b) $\overline{YZ}$ is called .... in the circle whose centre is M

(c) Each of $\overline{XM}$, $\overline{YM}$ and $\overline{ZM}$ is called .... in the circle M

(d) Δ YMZ is called .... triangle (due to its sides).

4 Put the suitable relation (> or < or =) to get a correct statement :

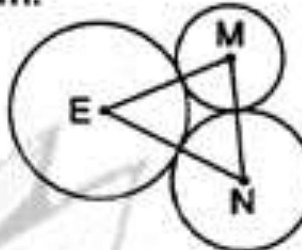


(a) AM .... $\frac{1}{2}$ AB (b) CB .... AB

(c) MC .... MB

5 In the opposite figure :

If the radius length of the circle M = 3 cm., and the radius length of the circle N = 4 cm. and the radius length of the circle E = 5 cm.



Complete the following :

(a) MN = ... cm. (b) ME = ... cm.

(c) EN = ... cm.

(d) The perimeter of Δ MEN = ... cm.

Second Drawing questions

1 Draw the circle M whose radius length is 3 cm. Draw $\overline{AB}$ as a diameter in it. Locate the points C , D and E such that MC = 2 cm., MD = 5 cm. , ME = 3 cm. , then complete :

(a) $\overline{ME}$ is called .... (b) The point D lies .... the circle

(c) $\overline{AE}$ is called ....

② Draw Δ XYZ which is equilateral and its side length = 4 cm. Draw a circle of centre X and radius length 4 cm.

Complete the following :

(a) $\overline{XY}$ is called .... in the circle X.

(b) $\overline{XZ}$ is called .... in the circle X.

(c) $\overline{YZ}$ is called .... in the circle X.

(d) The perimeter of Δ XYZ .... cm.

---

③ Draw the triangle ABC in which : AB = 6 cm., BC = 8 cm.and AC = 10 cm., then draw the circle M whose diameter is $\overline{AC}$, then find :

(a) The perimeter of the triangle ABC ....

(b) Use the protractor to find the measure of $\angle$ ABC ....

(c) The lengths of $\overline{AM}$, $\overline{BM}$ and $\overline{CM}$, what do you deduce ? ....

(d) The type of Δ MBC due to its angles. ....

(e) Mention two isosceles triangles. ....

④ Draw the isosceles triangle ABC which is right-angled at B where AB = 5 cm., from B draw the line segment which is perpendicular to $\overline{AC}$ (say $\overline{BD}$) and measure its length.

---

⑤ Draw the rectangle ABCD where AB = 8 cm., BC = 6 cm. take the point $L \in \overline{AD}$, where AL = 2 cm.
Draw Δ LBC, then draw $\overline{LZ}$ perpendicular to $\overline{BC}$
Find the length of $\overline{LZ}$ (without measuring), then find the perimeter of the rectangle DLZC



6 Draw the circle whose diameter length = 6 cm. Draw $\overline{BC}$ as a diameter of it, then take (B) as a centre and use the compasses with length 5 cm. to draw an arc to intersect the circle at X and Y join each of $\overline{BX}$, $\overline{BY}$, $\overline{CY}$, $\overline{CX}$ and $\overline{XY}$

If E is the point of intersection of $\overline{BC}$ and $\overline{XY}$

First : Complete using the protractor :

(a) m (∠ BXC) = ...
(b) m (∠ BYC) = ...
(c) m (∠ BEC) = ...
(d) m (∠ CEY) = ...

Second : Choose the correct answer from those given :

(a) Δ BXC is .... triangle.

(acute-angled *or* obtuse-angled *or* right-angled)

(b) Δ BXY is .... triangle.

(acute-angled *or* obtuse-angled *or* right-angled)

(c) Δ CXY is .... triangle.

(acute-angled *or* obtuse-angled *or* right-angled)

Third : Complete :

(a) The point of intersection of altitudes of Δ XBY lies ....

(b) The altitudes of Δ XBC intersect at the point ....

Unit 4

Probability



Lesson One :	Experimental Probability
Lesson Two :	Theoretical Probability

Experimental & Theoretical Probability

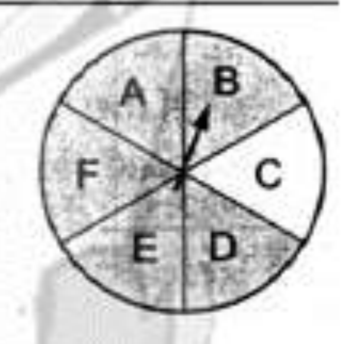
A survey was applied to ask 10 students about the foreign language they prefer to study. 5 students prefer English , 3 students prefer French and 2 students prefer German. If the total number of students in the school is 600 students :

How many students are predicted to prefer studying German ?

the probability that the students prefer German. = ...

the numbers of the students that prefer German. = ...

A spinner is divided into 6 equal sections :



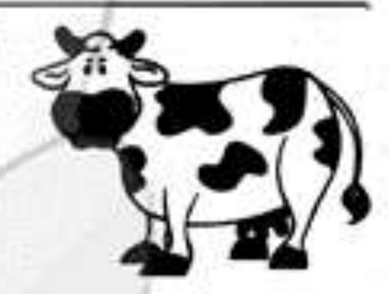
(a) What is the probability of spinning on any section ?

(b) Spinning the spinner 60 times. How many times are predicted to get the letter (A) as an outcome ?

....

....

A farm has 2 000 cows. If the probability that they get infected with cow-madness in this farm is 0.17 , what is the number of cows expected to be infected with this disease ?



....

....

A sample of 40 balls : 5 are red and the rest is in different colours.

What is the predicted number of red balls when the sample contains 400 balls ?

....

....

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1 **If we roll a regular number cube (die) , then complete the following :**

(a) The probability of getting a number greater than 4 = ...

(b) The probability of getting a number less than 3 = ...

(c) The probability of getting an even number = ...



(d) The probability of getting an odd number = ...



(e) The probability of getting a prime number = ...

(f) The probability of getting the number 5 = ...

(g) The probability of getting the number 7 = ...

(h) The probability of getting a number less than or equal to 6 = ...

(i) The probability of getting the number greater than 6 = ...

(j) The probability of getting a prime even number = ...

(k) The probability of getting a number divisible by 3 = ...

(l) The probability of getting an even number and not divisible by 3 = ...

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2 **Choose the correct answer from those given :**

(a) Tossing a regular coin , the probability of landing a head = ...

($\frac{1}{3}$ *or* $\frac{1}{2}$ *or* $\frac{3}{4}$ *or* 1)

(b) The probability of an impossible event = ...

(∅ *or* 1 *or* 0 *or* 2)

(c) The probability of the certain event = ...

(0 *or* 1 *or* 100 *or* ∅)

(d) The probability that the elephant flies is ....

(0 *or* 1 *or* 10 *or* ∅)

(e) It is .... that the sun rises from east.

(possible *or* impossible *or* expected *or* sure)

(f) A basket contains cards numbered from 1 to 20. If a card is drawn at random , what is the probability that the number written on the card is divisible by 6 ?

$(\frac{3}{20}$ or $\frac{4}{20}$ or $\frac{5}{20}$ or $\frac{6}{20})$

(g) A bag has 5 red balls and 3 white balls. If the balls are similar and a person draws a ball randomly , then the probability that the drawn ball is white = ...

$(\frac{3}{5}$ or $\frac{3}{8}$ or $\frac{5}{8}$ or $\frac{5}{3})$

(h) A letter of the word "Ahmed" is selected randomly.
What is the probability of selecting the letter "d" ?

$(\frac{1}{5}$ or $\frac{1}{4}$ or $\frac{1}{2}$ or $1)$

(i) A letter is selected randomly from the word "ZAMALEK".
The probability of selecting the letter A is ....

$(\frac{1}{7}$ or $\frac{2}{7}$ or $\frac{3}{7}$ or $\frac{4}{7})$

(j) 📖 A classroom holds 40 students , 25 are boys and the rest are girls. A student has been randomly selected , the probability of getting a girl is ....

$(\frac{3}{8}$ or $\frac{5}{8}$ or $\frac{3}{5}$ or $1)$

(k) There are 25 boys and 20 girls in a classroom. One pupil is chosen randomly. The probability that the chosen pupil is a girl equals ....

$(\frac{1}{20}$ or $\frac{4}{9}$ or $\frac{1}{25}$ or $\frac{5}{9})$

(l) 📖 The probability of the pupil's success in an exam is $\frac{8}{10}$, therefore the probability of failing is ....

$(\frac{1}{2}$ or $\frac{1}{5}$ or $\frac{1}{4}$ or $\frac{2}{9})$

(m) A bag contains 3 white balls , 2 black balls and one red ball. A ball is selected randomly from the bag. Then the probability that the selected ball is not black equals ....

$(\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ or $\frac{1}{6})$

3 Complete the following :

- 10 cards numbered from 1 to 10. If a card is drawn randomly , then the probability that the card is numbered by an odd number = ...
- When drawing a paper out of five identical papers numbered 1 , 2 , 3 , 4 and 5 , therefore the probability that the drawn paper has a prime number = ...
- A box has 5 white balls , 7 red balls , 3 blue balls. If a ball is drawn randomly from the box , then the probability that the ball is blue = ...
- In the experiment of throwing fair die once and observing the upper face , the probability that the apparent number is less than 1 equals ....
- If one of the digits of the number 867742231 is selected randomly , then the probability that the selectd number is even equals ....
- A box contains 48 oranges and 4 oranges of them are bad. If an orange is drawn randomly , then the probability that the drawn orange is bad = ...
  and the probability that the orange is good = ...
- An activity room has 3 doors numbered from 1 to 3 , if a student went out using one of them , then the probability that the student went out using the door number 2 is ....
- A box contains 24 lamps , 3 lamps are defective. A lamp has been randomly selected , the probability of getting a functional lamp = ...
- If the probability of the occurrence of an event is 0.6 , then the probability of the nonoccurrence of this event is ....
- A card has been drawn out of 5 cards containing the numbers :

32 25 14 63 27

- The probability of selecting a number that the sum of its two digits is 9 = ...

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4 A card has been randomly drawn out of 10 cards numbered from 1 to 10
Find the probability of getting :

- An odd number.
- A prime number.
- An even number greater than 6

A box contains 20 cards numbered from 1 to 20 Randomly a card has been selected. Calculate the probability of selecting :

(a) A prime number.

(b) A number divisible by 7

20 1 13
11
2 6 5

A bag contains 3 white balls , 7 red balls , and 5 yellow balls. All the balls are equal in size. If a ball is randomely drawn :

(a) What is the probability that the drawn ball is white ?

(b) What is the probability that the drawn ball is not red ?

A box contains 80 similar balls , some of them are red and the remained are blue. If the probability of drawing a red ball is $\frac{1}{4}$, find the number of blue balls.